

INDEX OF SUBJECTS

ABSTRACTS A and B, 1926.

An asterisk denotes a previous abstract. Patents are marked (P.)

A.

Abderhalden's reaction (KOMM), A., 860.
Abies sibirica, formation of resin in (PIGULEVSKI and GRIGORIEVA), A., 211.
Abietic acid, and its salts, manufacture of (DUPONT), (P.), B., 202.
 crystalline salts of (DUPONT, DESALBRES, and BERNETTE; DUPONT and DESALBRES), A., 611.
 glyceryl ester, crystalline (FONROBERT and PALLAUF), B., 594.
Abietic acid, *mono*-, *di*-, and *tri*-hydroxy-, and their salts and derivatives (RAU and SIMONSEN), A., 1246.
r-**Abietic acid**, *tetrahydroxy*- (LEVY and RAALF), B., 638.
Abietic anhydride (FONROBERT and PALLAUF), B., 594.
Abrasives, manufacture of (GERGONNE), (P.), B., 158; (BROCKBANK and ABRASIVE Co.), (P.), B., 241.
 in the form of slabs, wheels, and discs (SALERNI), (P.), B., 1015.
 aluminous (RICHMOND, MACDONALD, and GEN. ABRASIVE Co.), (P.), B., 543.
 containing molybdenum compounds (NORSKE MOLYBDEN-PRODUKTER A.-S.), (P.), B., 489.
Absorbent for gases, liquids, and solids (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 33.
Absorption, variations in power of (EFFRONT), B., 380.
Absorption apparatus, refrigerating (MANNESMANN KÄLTE-IND.), (P.), B., 696.
 towers (WADE and KOPPERS Co.), (P.), B., 649.
 See also Gas absorption apparatus.
Absorption spectra. See under Spectra.
Acacetin, synthesis of (ROBINSON and VENKATARAMAN), A., 1149.
Acclimatisation (DHAR), A., 860.
Accumulators, active material for positive electrodes of (BENNER and PREST-O-LITE Co.), (P.), B., 413.
 plates for (HADDON), (P.), B., 1019.
 separators for (NORRIS and WESTINGHOUSE UNION BATTERY Co.), (P.), B., 284.
 feeble current (HEESE), (P.), B., 835.
 lead (SOC. ANON. LE CARBONE), (P.), B., 591.
 Féry's theory for (DENINA), B., 1019.
 manufacture of (KAWAKAMI), (P.), B., 332*.
 improvements in (FÉRY), B., 412.
 electrolytes for (DE LA PORTE), (P.), B., 446; (DUCKER), (P.), B., 550.
 plates for, using lead suboxide (SHIMADZU), (P.), B., 551*.
 production of lead oxide from plates of (EVANS), (P.), B., 247.
 substances formed in working of (MAZZA), B., 953.
 dependence of electromotive force of, on acid concentration (SCHREIBER), B., 445.
 secondary reaction in (FÉRY and CHÉNEVEAU), B., 497*.
 old, recovery of lead compounds from (FESSIA), (P.), B., 794.
5:6-Acenaphtha-1:4:7-benzheptatriazine (GUHA and DE), A., 743.
Acenaphthene, dissociation equilibria of, with nitrobenzenes and with picric acid (v. HALBAN and ZIMPELMANN), A., 25.
 oxidation of (MARQUIS), A., 722.
Acenaphthene series (MORGAN and YARSLEY), A., 280.
Acenaphthene-2:4-disulphonic acid, 3-amino- (MORGAN and YARSLEY), A., 280.
Acenaphthenequinone, catalytic hydrogenation of, with nickel salts (v. BRAUN and BAYER), A., 729.
 action of sodamide on (KASIWAGI), A., 728.
Acenaphthenol, and its phenylurethane (MARQUIS), A., 722; (v. BRAUN and BAYER), A., 729.

4-Acenaphthoylpicolinic acid, and its hydrate and methyl ester (JEMICOTT), A., 304.
Acer negundo, respiration and peroxydase content in leaves of (SMIRNOV), A., 615.
Acetal, dibromo- (DWORZAK), A., 385.
Acetals, mixed acyl, velocity of hydrolysis of (SKRABAL and SAWIUK), A., 1010.
cycloAcetals as solvents for organic substances (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 248.
Acetaldehyde, preparation of, from ethyl alcohol (KRAUSE and ROESSLER & HASSLACHER CHEMICAL Co.), (P.), B., 609; (HOLZVERKOHLLUNGS-IND.), (P.), B., 610.
 from ethylidene diacetate (MARSHALL, SHAW, and CANADIAN ELECTRO PRODUCTS), (P.), B., 513.
 regeneration of spent mercury sludge from manufacture of (VEREIN F. CHEM. IND. and WALTER), (P.), B., 217.
 photolysis of (BOWEN and WATTS), A., 808.
 apparent electromotive force of (ARENSON, ROLLER and BROWN), A., 687.
 thermal decomposition of the vapour of (HINSHELWOOD and HUTCHISON), A., 804.
 electrolytic reduction of (SHIMA), A., 147.
 action of, with fused alkali hydroxides (FRY and SCHULZE), A., 710.
 artificial resins from (BAEKELAND, GOTTHELF, and BAKELITE CORP.), (P.), B., 956.
 fixation of, in alcoholic fermentation (BODNÁR, SZEPESSY, and FERENCZY), A., 438.
 formation of, in yeast fermentation (ELION), A., 758.
 in plant respiration (KLEIN and PIRSOULE), A., 439.
 in blood (GEE and CHAIKOFF), A., 1179.
 influence of insulin on formation of, in the organism (SUPNIEWSKI), A., 1179.
 detection of, in the anaërobic respiration of plants (NEUBERG and GOTTSCHALK), A., 98.
 determination of, in ether (PHELPS and ROWE), B., 461.
Acetaldoxime, scattering of light by (KITCHING), A., 15.
Acetamides, substituted, preparation of (NICHOLAS and ERICKSON), A., 1031.
Acetanilide, preparation of (MANICKE and GRIGEL), B., 511.
 manufacture of (ROY and SOC. CHIM. USINES DU RHÔNE), (P.), B., 466*.
 solubility of mixtures of, with antipyrine and pyramidone (OLIVERI-MANDALA and FORNI), A., 238.
p-disulphone and disulphoxides (CHILD and SMILES), A., 1243.
 poisoning. See under Poisoning.
Acetanilide, *o*-amino-, preparation of (BELL and KENYON), A., 741.
pentabromo- (BERNARDI), A., 966.
p-chloro-, neutral salt effect in formation of, from acetochloro-anilide (ÅKERLÖF), A., 125.
2:4-diiodo- (VECCHIOTTI), A., 720.
Acetanilide-*m*-sulphinic acid (CHILD and SMILES), A., 1243.
Acetanilide-*p*-sulphonyl iodide (CHILD and SMILES), A., 1244.
Acetanilide-2:4:6-trimercuriacetate, *m*-chloro- (VECCHIOTTI), A., 852.
p-**Acetatomercuridiphenyl sulphide** (SACHS and OTT), A., 396.
Acetatomercuriversonal, and its derivatives (RUPP and MÜLLER), A., 852.
Acethydroxamic acid, and α -hydroxy-, esters of (HOUBEN and PFANKUCH), A., 1236, 1237.

- Acetic acid, formation of, by bacterial fermentation (NEUBERG and WINDISCH), A., 324; (MEZZADROLI), B., 210.
 manufacture of (PASCAL), B., 767; (DREYFUS), (P.), B., 1013.
 from pea-nut shells (DE BLSUNCE), B., 448.
 concentration of (SUDA), (P.), B., 421.
 heat of mixing of, with water (SANDONNINI), A., 1008.
 thermodynamics of electrolytes in (WEBB), A., 1102.
 rates of diffusion of, in various solvents (MUCHIN and FAERMANN), A., 786.
 equilibrium of, with its ammonium salt and water (SUGDEN), A., 683.
 equilibrium of toluene, water, and (WOODMAN), A., 1101.
 equilibrium of *o*-toluidine, water, and (ANGELESCU), A., 357.
 behaviour of, with ammonia, amines, and amides in alcoholic solution (HÖLZL), A., 1206.
 compounds of, with chromium sulphate (RECOURA), A., 1237.
 glacial, analysis of (RICHMOND and ENGLAND), B., 645.
 determination of strength of (HARVEY), B., 564.
- Acetic acid, metallic salts, viscosity of aqueous solutions of (SIMON), A., 21.
 complex salts of (WEINLAND and SCHLAICH), A., 146.
 alkali salts, action of fluorine on (FICHTER and HUMPERT), A., 925.
 ammonium salt, astringent action of (STRAUB), A., 1267.
 beryllium salt, conductivity of (SIDGWICK and LEWIS), A., 1211.
 basic beryllium salt, crystal structure and constitution of (MORGAN and ASHBURY), A., 995.
 calcium salt, apparatus for distillation of (STATHAM and WEST VIRGINIA PULP AND PAPER CO.), (P.), B., 182.
 complex ferric salts of (WEINLAND and LOEBICH), A., 499; (WEINLAND and HÖRN), A., 711.
 lead salt, manufacture of (SHIMADZU), (P.), B., 539*.
 lead subsalt, reaction of phenol with (MEDLEY), B., 802.
 magnesium salt, constitution of solutions of (RIVETT), A., 681.
 mercuric salt, action of, on cholesterol (MERZ), A., 723.
 oxidation of codeine with (DIETERLE and DICKENS), A., 745.
 action of, on 2,4-dichloroaniline (VECCHIOTTI and CARANI), A., 747.
 action of, on *o*- and *p*-iodoanilines (VECCHIOTTI and MICHETTI), A., 1163.
 action of, on *o*-toluidine (VECCHIOTTI), A., 747.
 silver salt, reduction of, by sodium formate (COUTIE), A., 580.
 sodium salt, reactions of, with salts of weak metallic bases (BRITTON), A., 586.
 action of, on isobutylene dibromide and trimethylethylene dibromide (KRASSOVSKI and SCHENDEROVITCH), A., 1022.
- Acetic acid, esters, azeotropy of (HANNOTTE), A., 671.
p-aminophenyl esters (GALATIS), A., 609.
 amyl and ethyl esters, toxicity of (BILSMA), A., 863.
 isobutenyl and β -methyl- Δ^2 -buten- γ -yl esters (KRASSOVSKI and SCHENDEROVITCH), A., 1022.
 cellulose ester. See Cellulose acetate.
p-cuminyl ester (BERT), A., 285.
 ethyl ester, effect of salts, sugars, and temperature on solubility of (GLASSSTONE and POUND), A., 18.
 ethylidene ester, preparation of (SOC. CHIM. USINES DU RHÔNE), (P.), B., 692.
 iodomethyl ester (RENSHAW and WARE), A., 155.
 methyl ester, equilibrium of the hydrolysis of (BURROWS), A., 25.
 action of sugars and alcohols on hydrolysis of (DONNELLY), A., 363.
- Acetic acid, diamino-, acetylsuccinyl derivative, ethyl ester, glycine ester salt of (BERGMANN, STERN, and WITTE), A., 1236.
 bromo-, *p*-tolyl ester (WITTIG, BANGERT, and RICHTER), A., 301.
 5-bromo-3-nitro-, 2-hydroxybenzyl ester (KOHN and ROSENFELD), A., 282.
 chloro-, action of potassium cyanide, benzaldehyde, and (HEUZE), A., 961.
mono- and *di*-chloro-, uranium salts (LOBANOV), A., 372.
 dichloro-, 1-hydroxyhydrindamine salt (READ and McMATH), A., 1024.
di- and *tri*-chloro-, action of amines on (WHEELER and JENNINGS), A., 161.
 chlorobromo-, optical activity of, and its brucine and 1-hydroxyhydrindamine salts (READ and McMATH), A., 1024.
 cyano-, esters, condensation of, with glutaric esters (KÖHLER and REDD), A., 48.
 iodo-, basic ferric salt (WEINLAND and LOEBICH), A., 499.
- Acetic acid, oximinocyno-, oxide of, and its salts (PONZIO and DE PAOLINI), A., 825.
- Acetic acids, chloro-, molecular compounds of (WEISSENBARGER, SCHUSTER, and PAMER), A., 465.
- Acetic anhydride, manufacture of (CONSORTIUM F. ELEKTROCHEM. IND., MEINGAST, and MUGGEN), (P.), B., 386*; (ROY and SOC. CHIM. USINES DU RHÔNE), (P.), B., 466*; (HÖRMANN, KAUFER, and WACKER-GES. FÜR ELEKTROCHEM. IND.), (P.), B., 692*; (DREYFUS), (P.), B., 897, 995.
 from ethylidene diacetate (MARSHALL, SHAW, and CANADIAN ELECTRO PRODUCTS), (P.), B., 513.
 action of, on methylglyoxal (SJOLEMA and SECKLES), A., 1227.
 decomposition of oxalic acid by (WHITFORD), A., 146.
 analysis of (RICHMOND and EGLESTON), B., 645.
 determination of, gasometrically (WHITFORD), A., 189.
- Acet-2,4-dinitroanilide, oximino- (BORSCHIE and FRITZSCHE), A., 393.
- Acetoacetanilide, preparation of (PFEIFFER), A., 59, 1132.
- Acetoacetic acid, hydrolysis of, by acids (SKRABAL and ZAHORKA), A., 914.
 and its ethyl ester, oxidation of, by hydrogen peroxide (CLUTTERBUCK and RAPER), A., 427.
 esters, condensation of malonic esters with (GAULT and KLEES), A., 938.
 ethyl ester, absorption spectra of (MORTON and ROSNEY), A., 454.
 condensation products of (WEST), A., 49, 198.
 condensation of 3-bromo- and 3-nitro-4-dimethylaminobenzaldehyde with ammonia and (HINKEL and MADEL), A., 413.
 alkali salts (SIDGWICK and BREWER), A., 71.
 thallous salt (CHRISTIE and MENZIES), A., 56.
 5-chloro-2,4-dinitrophenylhydrazones (MÜLLER and ZIMMERMANN), A., 163.
 methyl ester, semicarbazone (BACKER and MEYER), A., 305.
- Acetoacetic acid, nitroso-, ethyl ester, cobaltoate and ferroate, and their ammonium salts (KÜSTER, ERFLE, v. ROLL, and SCHILLER), A., 821.
- Acetoaceto- α -naphthalide (GIBSON, HARIHARAN, MENON, and SIMONSEN), A., 1154.
- Acetoacetylresols (WITTIG, BANGERT, and RICHTER), A., 300.
 dioximes of (WITTIG and BANGERT), A., 176.
- Acetoacetylnaphthols (WITTIG, BANGERT, and RICHTER), A., 300.
- 4-Acetoacetyl-*m*-5-xenol (WITTIG, BANGERT, and RICHTER), A., 300.
- 4-Acetoacetyl-*m*-5-xenyl methyl ether (WITTIG, BANGERT, and RICHTER), A., 301.
- Aceto-*o*-anisidides, nitro- (C. K. and E. H. INGOLD), A., 833.
- Acetobenzylamide *p*-toluenesulphonate (NEBER and v. FRIEDLÖS-HEIM), A., 1247.
- Acetobromoamide, addition of hypobromous acid by means of (SCHMIDT, v. KNILLINO, and ASCHERL), A., 817.
- Acetochloroanilide, neutral salt effect in the rearrangement of, to *p*-chloroacetanilide (ÅKERLÖF), A., 125.
- α -Aceto- β -ethoxypropane γ -mercuribromide (SCHOELLER), (P.), B., 465.
- Acetoin. See Acetyl methylcarbinol.
- Acetol ethyl- and *n*-propyl-cycloacetals (BERGMANN and GIERTH), A., 728.
- α -Aceto- β -methoxy- γ -diethylaminopropane (SCHOELLER), (P.), B., 465.
- α -Aceto- β -methoxy- γ -dimethylaminopropane methiodide (SCHOELLER), (P.), B., 465.
- α -Aceto- β -methoxy- γ -iodopropane (SCHOELLER), (P.), B., 465.
- α -Aceto- β -methoxypropane γ -mercuribromide (SCHOELLER), (P.), B., 465.
- β -Aceto- α -methylsuccinic acid, barium salt and derivatives of (KÜSTER, MAUER, and PALM), A., 1024.
- 1-Acetonaphthylamide-6-(or 7)-sulphonic acid, 4-nitro- (RALPH and NAT. ANILINE and CHEMICAL CO.), (P.), B., 185.
- Acetone, preparation of, by means of bacteria (MEZZADROLI), B., 210.
 manufacture of (PASCAL), B., 767.
 by fermentation (Moskovits), (P.), B., 509, 962.
 production of, with alcohol, in fermentation (BAKONYI), A., 545.
 with alcohols, by fermentation (STRANGE), (P.), B., 604.
 with butyl alcohol (LEGG and COMMERCIAL SOLVENTS CORP.), (P.), B., 563.
 from artichokes (DESBOROUGH, THAYSEN, and GREEN), (P.), B., 1026.

- Acetone**, recovery of, from light oils (ZECHE STINNES, WEINDEL, and KIEMSTEDT), (P.), B., 264.
 absorption spectrum and photochemical decomposition of (PORTER and IDDINGS), A., 222.
 photolysis of (BOWEN and WATTS), A., 808.
 electrical conductivity in (WALDEN, ULICH, and BUSCH), A., 1104.
 latent heat of fusion of (MITSUKURI and AOKI), A., 668.
 vapour, thermal decomposition of (HINSHELWOOD and HUTCHINSON), A., 691.
 freezing points of mixtures of benzene and (YAMAMURA), A., 1208.
 melting-point curve of mixtures of hydrochloric acid and (HIRAI), A., 908.
 density of aqueous mixtures of (NAVILLE), A., 1199.
 vapour pressure of mixtures of chloroform and (WEISSENBARGER and SCHUSTER), A., 787.
 adsorption by charcoal of mixtures of benzene and (TRYHORN and WYATT), A., 19, 346.
 equilibrium of sodium iodide, water, and (MACY and THOMAS), A., 799.
 enolisation of (EVANS and NICOLL), A., 51.
 condensation of, at high temperature and pressure (IPATIEV and PETROV), A., 1130.
 reactions of polyhydric alcohols with (GRÜN and LIMPÄCHER), A., 632.
 action of, with fused alkali hydroxides (FRY and SCHULZE), A., 710.
 condensation of ammonium chloride, formaldehyde, and (MANICH and RITSERT), A., 504.
 interaction of methylamine, formaldehyde, and (MANNICH and BALL), A., 522.
 condensation of β -phenylhydroxylamine and (BANFIELD and KENYON), A., 828.
 effect of lactic acid bacteria on fermentation of (FRED, PETERSON, and MULVANIA), A., 1177.
 effect of insulin on production of, by the perfused liver (RAPER and SMITH), A., 1278.
 5-chloro-2,4-dinitrophenylhydrazone (MÜLLER and ZIMMERMANN), A., 163.
 3,5-dichloro-6-nitrophenylhydrazone (MÜLLER and HOFFMANN), A., 163.
 and chloro-, nitrophenylsemicarbazones (WHEELER and WALKER), A., 62.
 8-phenylthiosemicarbazone (STEPHEN and WILSON), A., 1262.
 semicarbazones (BAIRD and WILSON), A., 1141.
 sodium bisulphite, structure of (SCHROETER), A., 1226.
 derivatives of sugars. See *iso*Propylidene.
 iodoform reaction for (VAN DER LEE), A., 1125.
 determination of (FLEURY and AWAD; ALBIZZATI), A., 984.
 determination of, with hydroxylamine hydrochloride (MARASCO), B., 719.
Acetone, dihydroxy-, oxidation of (EVANS and WARING), A., 1227.
 influence of, on blood-sugar and glycosuria (MASON), A., 1054.
 effect of, on insulin hypoglycaemia (CAMPBELL and HEPBURN), A., 979; (REEVES and HEWITT), A., 1063.
 utilisation of, in the body, and its determination (KERMACK, LAMBIE, and SLATER), A., 861.
 determination of, colorimetrically (CAMPBELL), A., 443.
 determination of, in presence of dextrose and its fate in the organism (CAMPBELL, FLETCHER, HEPBURN, and MARKOWITZ), A., 1272.
Acetone substances, effect of ions on formation and excretion of (TAKAO), A., 973.
 determination of (BEHRE and BENEDICT), A., 1282; (SMITH), A., 1283.
Acetone di- γ -ethoxypropylmercaptol. See *iso*Propylidene di- γ -ethoxypropyl disulphide.
s-Acetonedisulphonic acid, potassium salt (RASCHIG and PRAHL), A., 1123.
 Acetonetetracarboxylic acid methyl ester, and its metallic salts (SCHROETER and FINCK), A., 731.
 Acetonetetrasulphonic acid, barium and potassium salts (RASCHIG and PRAHL), A., 1123.
 Acetonitrile, effect of, on the electrokinetic potential of solutions (ARND), A., 248.
 Acetonitrile, chloro-, reactions of magnesium organic compounds with (MATHUS), A., 54.
 2-Acetonyl-2-methyl-1,3-benzedithiole (HURTLEY and SMILES), A., 1150.
- Aceto-*p*-phenetide**, preparation of (MANICKE and GRIGEL), B., 511.
Acetophenone, preparation of (CRYER), A., 294.
 action of calcium hydride on (PORLEZZA and GATTI), A., 837.
 chlorohydrin (ALTWEGG, CHERMETTE, and SOC. CHIM. USINES DU RHÔNE), (P.), B., 463.
 nitrophenylsemicarbazone (WHEELER and WALKER), A., 62.
 semicarbazones (BAIRD and WILSON), A., 1141.
Acetophenone, 2-*mono*- and 2-*o*-*di*-bromonitro-, and their oximes (MEISENHEIMER, ZIMMERMANN, and v. KUMMER), A., 405.
o-cyano-, condensation of, with *o*-hydroxy-aromatic aldehydes (GHOSAL), A., 1149.
 2-hydroxy-, oxime, acetate of (LINDEMANN and THIELE), A., 1047.
 5(?)-nitro-3-amino-6-hydroxy- (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 85.
o-oximino- (BORSCH and WALTER), A., 515.
o-thiocyano- (ARNDT, KIRSCH, and NACHTWEY), A., 843.
Acetophenone-*o*-carboxylic acid, menthyl ester (RULE and SMITH), A., 457.
Acetophenoneglycerol (ALTWEGG, CHERMETTE, and SOC. CHIM. USINES DU RHÔNE), (P.), B., 463.
Acetophenoneglycol (ALTWEGG, CHERMETTE, and SOC. CHIM. USINES DU RHÔNE), (P.), B., 463.
Acetopyruvic acid, ethyl ester, hydrazones of (FAVREL and JEAN), A., 48.
Aceto-*o*-toluidide, 5-thiol- (CHILD and SMILES), A., 1244.
Aceto-*m*-toluidide, bromination of (OLIVIER), A., 161.
 action of chloroacetyl chloride on (RICHTER), A., 1132.
Aceto-*m*-toluidide, 2,6-dichloro-4-nitro-, and its derivatives (DAVIES and LEEPER), A., 827.
Aceto-*o*-toluidide-5-sulphinic acid, and its derivatives (CHILD and SMILES), A., 1243.
o-Acetoveratrole. See 2,3-Dimethoxyacetophenone.
o-Acetoxyacetophenone, 4-hydroxy- (NOLAN, PRATT, and ROBINSON), A., 1043.
o-Acetoxybenzoic acid (*acetylsalicylic acid*; *aspirin*), preparation of (DEUTS. GASLÜHLICHT-AUER-GES. and MERZBACHER), (P.), B., 385; (MANICKE and GRIGEL), B., 511.
 action of, on acid-base exchange (VEIL and GRAUBNER), A., 1273.
 beryllium salt (EINHORN), A., 401.
 stable product containing (NYEGARD & Co. A./S.), (P.), B., 386.
 2-Acetoxybenzonitrile, 3,5-*di*bromo-, and its acetyl derivative (LINDEMANN and THIELE), A., 1047.
Acetoxydiphenyleneacetic acid, and its fluorenyl ester (KIEGL, WÜNSCH, and WEIGLE), A., 612.
 3-Acetoxymercuri-5-*iso*amylbenzaldehyde, 2-hydroxy- (HENRY and SHARP), A., 1162.
 2-Acetoxymercuri-*p*-*iso*amylphenol (HENRY and SHARP), A., 1162.
 3-Acetoxymercuri-5-*tert*-butylbenzaldehyde, 2-hydroxy- (HENRY and SHARP), A., 1162.
 2-Acetoxymercuri-*p*-*tert*-butylphenol (HENRY and SHARP), A., 1162.
 4(6)-Acetoxymercuricarvacrol (HENRY and SHARP), A., 1162.
 3-Acetoxymercuri-4-hydroxy-2-methyl-5-*isopropyl*benzaldehyde (HENRY and SHARP), A., 1163.
 5-Acetoxymercuri-3-methyl-6-*isopropyl*benzaldehyde, 4-hydroxy- (HENRY and SHARP), A., 1163.
o-Acetoxy-3-methoxyacetophenone, 4-hydroxy- (NOLAN, PRATT, and ROBINSON), A., 1043.
o-Acetoxy-*p*-methoxybenzoic acid, as an antipyretic (SCHULEMANN, SCHÖNHÖFER, and WINTHROP CHEMICAL Co.), (P.), B., 692*.
 Acetoxyethyltrimethylammonium bromide (RENSHAW and BACON), A., 805.
 2-Acetonaphthalene-1-carboxylic acid, and its chloride (ZETZSCHE, FLÜTSCH, ENDERLIN, and LOOSLI), A., 402.
 8-Acetoxyquinoline, derivatives of (DIMROTH), A., 298.
 Acetyl chloride, action of, on chlorosulphonic acid (KRAČJINOVIĆ), A., 1125.
 Acetyl chloride, chloro-, action of, on aceto-*m*-toluidide (RICHTER), A., 1132.
 Acetylacetone, absorption spectra of (MORTON and ROSNEY), A., 454.
 metallic derivatives, structure and isomorphism of (ASTBURY), A., 996.
 gadolinium salt (SARKAR), A., 1218.
 hafnium and zirconium derivatives (v. HEVESY and LÖGSTRUP), A., 1125.
 peroxide as component of primers and detonators (CLAESSEN), (P.), B., 254.

- γ -Acetylacetone- α -dicarboxylic acid, ethyl ester and copper salt (MALACHOWSKI), A., 1024.
- β -Acetylacrylmethylaniide, α -hydroxy- (KÜSTER and ERFLE), A., 713.
- d*-Acetylalanine, and its methyl ester (KARRER, ESCHER, and WIDMER), A., 505.
- Acetyl-*p*-aminoazobenzene, oximino-, as indicator (NAEGELI), A., 355.
- Acetylanhydro-*dl*-ornithine (BERGMANN and KÜSTER), A., 1235.
- Acetylanhydrotris-*o*-aminobenzaldehyde, and its derivatives (SEIDEL), A., 1141.
- Acetylaniline-*p*-sulphonic acid, and *o*-nitro-, potassium salts (SAKELLARIOS and JATRIDS), A., 59.
- 3-Acetylanthragallol (GREEN), A., 1042.
- Acetylanthranil, 3:5-dichloro- (ELION), A., 165.
- 2-Acetylanthrappurpurin (GREEN), A., 1041.
- Acetyl-1:2:3-benzotriazole (BELL and KENYON), A., 741.
- 2-Acetylcyclobutane-1:2:3-tricarboxylic acid, ethyl ester (ING and PERKIN), A., 48.
- Acetylcarbamide, cyano-, reduction of (RUPE, METZGER, and VOGLER), A., 55.
- 9-Acetylcarbazole, 3:6-dibromo- (LINDEMANN and MÜHLMANN), A., 75.
- α - and β -Acetylchloroglucoses (SCHLUBACH), A., 600.
- Acetylcholine, action of, on muscle cells (CLARK), A., 1057.
- effect of narcotics on the action of, on the intestine (RYDIN), A., 320.
- bromide (RENSHAW and BACON), A., 805.
- Acetylcholine, chloro-, chloroacetate (RENSHAW and WARE), A., 155.
- Acetylcitric acid, velocity of hydrolysis of (ZAWIDZKI), A., 363.
- Acetyl-*p*-cresol, 3-bromo- (WITTIG, BANGERT, and RICHTER), A., 301.
- mono*- and *di*-nitro- (WITTIG, BANGERT, and RICHTER), A., 300.
- 2-Acetyl-1:2-dihydrobenzthiazole, 5-bromo-1-imino-, and 1-imino-, and its bromides (HUNTER), A., 849.
- 3-Acetyl-2:6-dimethylchromone, oximes of (WITTIG and BANGERT), A., 175.
- N*'-Acetyl-7:7'-dimethyldihydroindigotin acetate, *N*-nitroso-2-hydroxy- (POSNER, STOCKENSCHNEIDER, NEUMANN, NACHRING, MEYER, and BEISSNER), A., 1155.
- 1-Acetyl-5:5-dimethylhydantoin (BILTZ and SLOTTA), A., 1046.
- 3-Acetyl-1:4-dimethylpiperidine, and 4-hydroxy-, and their derivatives (MANNICH and BALL), A., 522.
- 3-Acetyl-1:4-dimethyltetrahydropyridine, and its derivatives (MANNICH and BALL), A., 522.
- Acetyldiphenylamine, preparation of, from keten (HURD), A., 279.
- Acetylene, purification of (WACKER, GES. F. ELEKTROCHEM. IND., and GRUBER), (P.), B., 230.
- materials for (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 85, 262.
- recovery of lime products from manufacture of (STEPHENSON and ALLEN-LIVERSIDGE, LTD.), (P.), B., 979.
- ions, mobility of, in air (ERIKSON), A., 989.
- action of α -particles on (MUND and KOCH), A., 480; (LIND, BARDWELL, and PERRY), A., 770.
- density and compressibility of (SAMESHIMA), A., 569.
- absorption of, by colloidal solutions (GATTERER), A., 347.
- porous mass for absorption of (RAY and CARBIDE & CARBON CHEMICALS CORP.), (P.), B., 119; (AUTOGEN GASACCUMULATOR and STEIL), (P.), B., 230.
- temperature of flame of (HENNRICH), A., 669.
- pyrogenic condensation of (SCHLÄPFER and STADLER), A., 389.
- crude, formation of $\alpha\beta\alpha'\beta'$ -tetrachlorodithiylsulphoxide from (MÜLLER and METZGER), A., 1224.
- derivatives (RUGGLI and REINERT), A., 391.
- iodination of (EICHELBERGER), A., 713.
- magnesium derivative, action of acetaldehyde on (LESPICAU), A., 500.
- preparation of acetylenic alcohols from (LESPICAU), A., 935.
- determination of, volumetrically (STREIBINGER and WOJS), B., 971.
- Acetylenes, substituted, mercury derivatives of (JOHNSON and McEWEN), A., 495.
- Acetylenediureinecarboxylic acid, methyl ester, and hydroxy-, basic copper ammonium salt (BILTZ and SCHIEMANN), A., 743.
- α -Acetylene- $\alpha\beta\beta'$ -tricarboxylic acid, ethyl ester, derivatives of (GAULT and KLEES), A., 938.
- Acetylformhydroxamic acid α -naphthylidiazone, and its acetyl derivative (GASTALDI and PRINCIVALLE), A., 1260.
- Acetylformocholine, salts of (RENSHAW and WARE), A., 155.
- d*-Acetylglutamic acid (KARRER, ESCHER, and WIDMER), A., 505.
- Acetylglycineanilide (GRÄNACHER, SOHELLING, and SCHLATTER), A., 78.
- Acetylglycine-ethylamide (GRÄNACHER, SOHELLING, and SCHLATTER), A., 78.
- 1-Acetylcyclohexane-1-acetic acid, and its derivatives (ROTHSTEIN and THORPE), A., 1039.
- Acetyl-leucine, and its methyl ester (KARRER, ESCHER, and WIDMER), A., 505.
- Acetyl-*dl*-leucine, derivatives of (BERGMANN, STERN, and WITTE), A., 1236.
- Acetyl-leucylalanine (BERGMANN, STERN, and WITTE), A., 1236.
- N*-Acetyl-*dl*-leucylamidooacetic acid, ethyl ester (BERGMANN, STERN, and WITTE), A., 1236.
- Acetyl-*l*-maldianilide (FREUDENBERG and NOË), A., 54.
- Acetyl-*l*-maldi-methylaniide (FREUDENBERG and NOË), A., 54.
- 2-Acetyl-2-methyl-1:3-benzodithiole (HURTLEY and SMILES), A., 1150.
- 3-Acetyl-2-methylbenzo-1:4-pyrone, and 6-hydroxy-, and its acetyl derivative (WITTIG, BANGERT, and RICHTER), A., 300.
- 8-Acetyl-2-methylbenzo-1:4-pyrone, 7-hydroxy- (WITTIG, BANGERT, and RICHTER), A., 301.
- Acetylmethylcarbinol, formation of, in fermentation (LEBEDEV), A., 324; (ELION), A., 543, 758.
- fermentation of, by yeast (NEUBERG and KOBEL), A., 96.
- behaviour of, in the animal body (NEUBERG and GOTTSCHALK), A., 89.
- ethyl- and *n*-propyl-cycloacetals (BERGMANN and GIERTH), A., 728.
- detection of (KLUYVER, DONKER, and VAN 'T HOOFT), A., 203.
- 3-Acetyl-9-methyl-4-indoxylspirocyclopentane (MANJUNATH and PLANT), A., 1151.
- 2-Acetyl-3-methylpyrrole (FISCHER and WIEDEMANN), A., 736.
- 2-Acetyl-3-methylpyrrole-4-carboxylic acid, and its ethyl ester, and 2-chloro- (FISCHER and WIEDEMANN), A., 736.
- 5-Acetyl-2-methylpyrrole-3-carboxylic acid, and 5-chloro- and -cyano-, ethyl esters (FISCHER and SCHUBERT), A., 737.
- β -Acetyl- α -methylsuccinic acid, and its ethyl hydrogen ester (KÜSTER, MAURER, and PALM), A., 713.
- 9-Acetyl-6-methyltetrahydrocarbazole, and 10:11-dihydroxy-, and 5-nitro- (MANJUNATH and PLANT), A., 1151.
- Acetylmorphine *N*-oxide (POLONOVSKI), A., 1160.
- 2-Acetylnaphthalene-4-sulphonic acid, 1-hydroxy- (FRIES and SCHMIELSCHMIDT), A., 295.
- Acetylnaphthols. See Naphthyl methyl ketones, hydroxy-.
- 2-Acetylphenol, 4-chloro-, derivatives of (WITTIG, BANGERT, and RICHTER), A., 301.
- 6-nitro- (WITTIG, BANGERT, and RICHTER), A., 300.
- Acetylphenylacetylenesemicarbazone (v. AUWERS and STAUDINGER), A., 741.
- N*-Acetyl-*dl*-phenylalanine, derivatives of (BERGMANN, STERN, and WITTE), A., 1236.
- Acetyl-*dl*-phenylalanylamidooacetic acid, ethyl ester (BERGMANN, STERN, and WITTE), A., 1236.
- N*-Acetylphenylalanyl-*d*-glutamic acids, and their dimethyl esters (BERGMANN, STERN, and WITTE), A., 1236.
- N*-Acetyl- α -phenylalanyl-*l*-tyrosine (BERGMANN, STERN, and WITTE), A., 1236.
- 1-Acetylphenyl-1:2:3-benzotriazoles (BELL and KENYON), A., 1241.
- Acetyl-*o*-phenylenediamine. See Acetanilide, *o*-amino-.
- 2-Acetylsalicylic acid. See *o*-Acetoxybenzoic acid.
- 3-Acetylsalicylic acid, 5-chloro- (WITTIG, BANGERT, and RICHTER), A., 302.
- Acetyltannins, analysis of (O. and J. M. FERNÁNDEZ), B., 461.
- 6-Acetyl-1:2:3:4-tetrahydronaphthalene, 5-nitro- (BORSCH and BODENSTEIN), A., 1133.
- Acetyl-*p*-tolueneazo-*p*-toluidine, oximino-, as indicator (NAEGELI), A., 355.
- Acetyltolyl acetates, and bromo- (WITTIG, BANGERT, and RICHTER), A., 301.
- 4-Acetyl-*m*-tolyl acetate and methyl ether, 6-chloro- (WITTIG, BANGERT, and RICHTER), A., 301.
- 3-Acetyl-2:5:7-trimethylbenzo-1:4-pyrone (WITTIG, BANGERT, and RICHTER), A., 300.
- 8-Acetyl-2:3:3-trimethylchromanone, 6-chloro-2-hydroxy-, acetyl derivative (WITTIG, BANGERT, and RICHTER), A., 302.
- 1-Acetyl-3:5:5-trimethylhydantoin (BILTZ and SLOTTA), A., 1046.
- 4-Acetyl-2:3:5-trimethylpyrrole (FISCHER and SCHUBERT), A., 737.

- 5-Acetyl-2:3:4-trimethylpyrrole, and chloro- (FISCHER and WALACH), A., 1256.
- Achillea millefolium*, pigments of (KYLIN), A., 1183.
- cyanophorio glucoside from (ROSENTHALER), A., 210.
- Acid, and its salts, from dextrose and phenylhydrazine-*p*-sulphonic acid (SUZUKI and SAKURAI), (P.), B., 76.
- $C_7H_{10}O_4$, from methylation of ethyl isopropylidene malonate (KON and SREIGHT), A., 1246.
- $C_8H_9O_4N$, and its derivative with diazomethane, from oxidation of yohimboic acid (WARNAT), A., 1263.
- $C_8H_{11}O_4$, and its derivatives, from oxidation of tetramethylfructose (HAWORTH and HIRST), A., 1126.
- $C_8H_7O_2N$, by oxidation of yohimbine hydrochloride (WARNAT), A., 1264.
- $C_{11}H_{16}O_4$, from oxidation of sodium camphene-2-carboxylate (HOUBEN and PFANKUCH), A., 1252.
- $C_{12}H_{22}O_4$, and its dimethyl ester, from tetrahydroclemene (RUZICKA and PFEIFFER), A., 1148.
- $C_{14}H_{26}O_2$, from sperm oil (TSUJIMOTO), B., 636.
- $C_{18}H_{31}O_2N$, and its copper salt, from esters of α -bromo- γ -nitro- β -diphenylethylmalonic acid and potassium acetate (KOHLER and BARRETT), A., 849.
- $C_{16}H_{28}O_6$, from 2-benzylidenecyclohexanone and ethyl sodium malonate (VORLÄNDER and KUNZE), A., 1144.
- $C_{17}H_{34}O_2$, and its silver salt, from resin of *Hevea* rubber (WHITBY, DOLID, and YORSTON), A., 841.
- $C_{20}H_{17}O_2N_3$, and its salts and derivatives, from chloroacetic acid, potassium cyanide, and benzaldehyde (HENZE), A., 961.
- $C_{21}H_{30}O_6$, from oxidation of oxydigitogenic acid (WINDAUS and SHAH), A., 404.
- $C_{21}H_{31}O_{11}N$, from oxidation of oxydigitogenic acid (WINDAUS and SHAH), A., 404.
- $C_{22}H_{30}O_{10}$, from oxidation of digitoic acid (WINDAUS and SHAH), A., 404.
- $C_{22}H_{25}O_8N$, and its lead salt and sulphate, from narcotinc (DRUMMOND and McMILLAN), A., 1263.
- $C_{22}H_{31}O_{10}N$, from oxidation of digitoic acid (WINDAUS and SHAH), A., 404.
- $C_{24}H_{46}O_8$, from hydrolysis of cerebroside of brain (KLENK), A., 1124.
- $C_{27}H_{46}O_8$, from potassium hypobromite and iodocholesterol (MERZ), A., 723.
- $C_{27}H_{45}O_4I$, from iodocholesterol and potassium hypobromite (MERZ), A., 723.
- $C_{30}H_{48}O_8$, and its derivatives, from oxidation of hederagenin methyl ester (JACOBS and GUSTUS), A., 1250.
- $C_{31}H_{48}O_8$, from oxidation of hederagenin methyl ester (JACOBS and GUSTUS), A., 1250.
- Acids, definition of (BRÖNSTED), A., 797.
- moderately ionised, ionisation constants of (SHERRILL and NOYES), A., 1006.
- internal friction and density of mixed aqueous solutions of salts and (GRUNERT), A., 350.
- equilibria of amines and (KREMAN, WEBER, and ZECHNER), A., 393.
- action of formaldehyde and secondary amines on (MANNICH and STEIN), A., 165.
- corrosion of metals by (EVANS), A., 805; (McCULLOCH), A., 206.
- fate of, in the body (FISKE, GOODELL, HATHAWAY, and WEST), A., 539.
- aliphatic, molecular weights of (TRAUTZ and MOSCHEL), A., 997.
- derivatives of (WHITBY), A., 819.
- ω -cyclohexyl derivatives of (HIERS and ADAMS), A., 1136.
- aromatic, effect of substituents on the stability of carboxyl groups in (HEMMELMAYR and MEYER), A., 403.
- and their salts, hydrogenation of, under pressure (IPATIEV and RAZUBAIEV), A., 400, 1138.
- effect of hydrogen-ion concentration on antiseptic action of (KURODA), A., 541.
- metabolism of. See under Metabolism.
- mono- and poly-basic, recognition and separation of (WEITZ), A., 1006.
- dibasic, electrolytic dissociation of (LARSSON), A., 1007.
- saturated, melting point of (FAIRWEATHER), A., 668.
- acyclic, preparation of esters of (CONTZEN-CROWET), A., 938.
- carboxylic, and their salts and esters, ultra-violet absorption spectra of (LEY and HÜNECKE), A., 556.
- dicarboxylic, heats of combustion of, and their anhydrides (HARTMAN), A., 800.
- Acids, nephropathic action of (CORLEY and ROSE), A., 756.
- esters, hydrolysis of, by lipase (MCGINTY and LEWIS), A., 640.
- saturated, and their ethyl esters, X-ray structure of (NORMAND, ROSS, and HENDERSON), A., 1195.
- fatty, structure of (FRIEDEL), A., 340.
- structure and orientation of (TRILLAT), A., 890.
- preparation of, by means of bacteria (MEZZADROLI), B., 210.
- continuous production of glycerin, ammonium sulphate, and (GRAUBNER), (P.), B., 332.
- distillation of (HAUSAMANN), B., 200; (N. V. JURGENS' MARGARINEFABR.), (P.), B., 448.
- apparatus for distillation of (BOLLMANN), (P.), B., 713.
- reflexion of X-rays by (PRINS and COSTER), A., 781.
- surface tension of (DUBRISAY), B., 99.
- hydrogenation of (N. V. ALGEM. NORIT MAATSCHAPPIJ), (P.), B., 333.
- catalytic formation of hydrocarbons from (STADNIKOV and IVANOVSKI), A., 1110; B., 306.
- action of hydrazine and phenylhydrazine on (VAN ALPHEN), A., 46.
- reactions between metallic oxides and, in the colloidal state (STERKERS and BREDEAU), A., 792.
- and their salts, effect of, on yeast fermentation (KATAGIRI), A., 642.
- metabolism of. See Metabolism.
- influence of glutathione on oxidation of (ALLOTT), A., 1172.
- bromiodo- and iodohydroxy-derivatives, calcium salts, preparation of (HOLDE and GORGAS), B., 836.
- determination of, in fats for customs purposes (HELLER), B., 372.
- determination of, in organs (FISCHER), A., 1283.
- determination of resin acids and, in varnishes (WOLFF), B., 202.
- separation of, from glycerides (EISENSTEIN), (P.), B., 887.
- monobasic, heats of crystallisation of (GARNER, MADDEN, and RUSHBROOKE), A., 1087.
- higher, X-ray study of (PIPER, MALKIN, and AUSTIN), A., 1083.
- capillary curves of (FRUMKIN), A., 1093.
- salts, conductivity and surface tension of molten (BHATNAGAR, PRASAD, and SINGH), A., 477.
- sodium salts, viscosity of aqueous solutions of (MALIK), A., 1006.
- cellulose esters of (KITA, MAZUMA, SAKURADA, and NAKASHIMA), B., 45, 870.
- unsaturated, polymerisation and oxidation of (BAUER), B., 836.
- in tissues (BLOOR), A., 752.
- methyl esters, hydrogenation of, with nickel catalysts (TOYAMA and TSUCHIYA), B., 286.
- volatile, analysis of mixtures of (BEHRENS), A., 1266.
- determination of, in bacterial cultures (VIRTANEN), A., 764.
- mixed, safety in manufacture of (KERSHAW), B., 220.
- nitrating, calculations for regeneration of (HANSEN), B., 612.
- organic, preparation of, by fermentation (FALCK), (P.), B., 853.
- production of, from soda-cellulose waste liquor (DERIVEAU, DE FERSEN, FISCH, LANCESSEUR, POTEL, and WATEL), (P.), B., 49.
- dissociation constants of, in presence of boric acid (BÖESEKEN and COOPS), A., 681.
- adsorption of, by active charcoal (SURUN), A., 788.
- behaviour of, with bases in non-aqueous solutions (HÖLZL), A., 1206.
- salts of (VERKADE), A., 820.
- alkali salts, determination of (FIGDOR), B., 383.
- silver salts, action of iodine on (WIELAND and FISCHER), A., 46.
- action of acetyl derivatives of, with benzene and aluminium chloride (CRYER), A., 294.
- optically active rotation of mixtures of aldehydes and ketones with (PASSERINI), A., 226.
- of the oxalic acid series, heats of combustion of (VERKADE, HARTMAN, and COOPS), A., 686.
- oxidising, determination of, electrometrically (MALAFRADE), A., 490.
- of the sugar group, preparation of (KILIANI), A., 51.
- unsaturated, methyl esters, ozonisation of (NOLLER and ADAMS), A., 712.
- weak, dissociation constants of (DHAR), A., 796.
- determination of, iodometrically (KOLTHOFF), A., 813.

- Acid anhydrides. See Anhydrides, acid.
- Acid chlorides, catalytic reduction of (ZETTSCHKE, FLÜTSCH, ENDERLIN, and LOOSLI), A., 402.
- Acid liquors, non-rusting connexions for wooden apparatus for (HACKEL), (P.), B., 177.
- Acid sludge, products from (BENNETT, MURPHY, and STORY), (P.), B., 231.
- Acid-proof material, production of (DEUTS. GASGLÜHLICHT-AUER.-GES.M.B.H.), (P.), B., 667.
- Acidosis, influence of ethyl α -hydroxystearate on (WEST and BENEDICT), A., 196.
- Aconite, assay of extracts of (CORNWELL and JONES), B., 801.
- Aconitic acids, natural occurrence of (BEATH), A., 1025.
- Acrolein (acrolein), critical solution temperature of aqueous solutions of (BOUTARIC and CORBET), A., 1001.
- electrolytic reduction of (READ and FREER), A., 714.
- action of halogens on (BERLANDE), A., 47.
- action of, on magnesium derivative of acetylene (LESPIEAU), A., 500.
- Acrolein, α -iodo- (BERLANDE), A., 47.
- Acridine derivatives and their solutions, preparation of (SCHNORF and HEFTI), (P.), B., 341.
- manufacture of (BRIT. DYESTUFFS CORP., PERKIN, and BURGER), (P.), B., 420.
- Acridine-9-carboxylic acid, preparation of (HOMBERGER and JENSEN), A., 526.
- Acridinium compounds, production of (CASSELLA & Co.), (P.), B., 466.*
- Acridone, 3-amino-, acetyl derivative (GOLDSTEIN and RODEL), A., 1138.
- Acridyls, halogen-substituted (GOMBERG and TABERN), A., 738.
- 9-Acridyldimethylol. See β -9-Acridylpropane, α , γ -dihydroxy-.
- β -9-Acridylethyl alcohol. See 9-Ethylacridine, β -hydroxy-.
- β -9-Acridylpropane, α , γ -dihydroxy-, and its salts (HOMBERGER and JENSEN), A., 526.
- Acrylyl peroxide, trichloro- (BÜSEKUN and GELISSEN), A., 166.
- Actinium, chemical properties of (GLEDITSCH and CHAMIE), A., 332.
- disintegration series of (WILKINS), A., 654.
- independent origin of the disintegration series of (IMORI), A., 990.
- and its disintegration derivatives, γ -rays from (MEITNER), A., 106.
- absorption of the penetrating radiation from (FRILLEY), A., 771.
- Activity coefficients of electrolytes (RODEBUSH), A., 474; (RANDALL and WHITE), A., 1208.
- Acyamines, halogeno-, analogous behaviour of persubstituted halogen compounds and (SCHMIDT, ASCHERL, and v. KNILLING), A., 1121.
- O-Acyl-N-aryl compounds, behaviour of, on acetylation and benzoylation (RAIFORD and CLARKE), A., 517.
- Acyindazoles (MEISENHEIMER and SENN), A., 414.
- Acylons, copper compounds of (FEIGL, SICHER, and SINGER), A., 70.
- Adaline (α -bromoethylbutylcarbamide), identification of (GENOT), B., 75.
- Additive reactions and tautomerism (COOPER and C. K. and E. II. INGOLD), A., 938.
- Adenine nucleotide, preparation of, from tea leaves (CALVERY), A., 982.
- Adhesion, studies in (HARDY and NOTTAGE), B., 775.
- in solutions (SCHILOV and NEKRASSOV), A., 20; (SCHILOV and PEVSNER), A., 238; (DUBININ), A., 1090; (SCHILOV and TSCHEPPELEVETZKI), A., 1200.
- Adhesives (LONG), (P.), B., 209.
- and their action (McBAIN and HOPKINS), B., 557.
- films of (McBAIN and HOPKINS), B., 291.
- for timber, mechanical tests of (ROYAL AIRCRAFT ESTABLISHMENT), B., 557.
- water paint, evaluation of (WAGNER), B., 638.
- Adipic acid, alkyl hydrogen esters (CONTZEN-CROWET), A., 938.
- n-dibutyl and n-dipropyl esters (CONTZEN-CROWET), A., 938.
- Adipic acids, α -halogenated, derivatives of (HUNTER), A., 1125.
- Adipocere (STRASSMANN and FANTL), A., 752.
- Adrenaline (suprarenine; epinephrine), synthesis of (OTT), A., 722.
- catalysis of oxidations by (ROEST), A., 1179.
- effect of, on photographic plates (VOLLMER), A., 920.
- action of, on self-fermentation of yeast (POPPER), A., 95.
- Adrenaline, action of, on blood-serum in disease (KYLIN), A., 1053.
- effect of, on lymph (PETERSEN and HUGHES), A., 205.
- content of, in suprarenal gland of rabbits (TAKAHASHI), A., 857.
- d- and l-Adrenalines, sensitising action of, to β - and α -rays (ZWAARDEMAKER), A., 554.
- Adsorbents (BEHRMAN and INTERNAT. FILTER Co.), B., (P.), 568; (STEWART and SHELL Co. of CALIFORNIA), (P.), B., 808.
- from silica gel (TEITSWORTH and CELITE Co.), (P.), B., 345.
- for purification of alcohols and oils (RIEHL-WERK RIONTER), (P.), B., 295.
- used in therapy, valuation of (SABALITSCHKA and ERDMANN), B., 419.
- Adsorption (TRYHORN and WYATT), A., 19, 346; (MAGNUS and ROTH; MAGNUS and BRAUER), A., 346; (GHOSH, BHATTACHARYA, and DHAR), A., 348; (LIEBATOV), A., 571, 673, 789; (DHAR and GHOSH), A., 673; (TESTONI), A., 789; (GHOSH and DHAR), A., 794, 1004; (MAGNUS and CAHN; MAGNUS), A., 1001; (SEN), A., 1004; (MEHROTRA and DHAR), A., 1091.
- theories and technique of (McBAIN), A., 467.
- chemical nature of (SEN), A., 572.
- optical study of (FODOR and RIWLIN), A., 238.
- and diffusion in an electric field (GICKLHORN, FÜRTH, and BLÜH), A., 1092.
- kinetics of (SYRKIN and BERNSTEIN), A., 581; (HUGGINS and FIELD), A., 1002.
- and reaction (NEVILLE), A., 899, 1092.
- and capillary condensation (BRAY and DRAPER), A., 674.
- and cataphoresis (VAN DER GRINTEN), A., 467.
- and swelling (KUBELKA and TAUSSIG), A., 900.
- balance for use in (McBAIN and BARR), A., 493.
- effect of electrolytes on, at benzene-soap solution surfaces (DUBRISAY), A., 672, 789.
- of complex compounds (SCHILOV and NEKRASSOV), A., 20.
- of dissolved substances (CHARRIOU), A., 1200.
- and solubility of electrolytes (SCHILOV and TSOHEPELEVETZKI), A., 1200.
- of electrolytes by parchment (REMY and REISENER), A., 1201.
- of gases, history of (LARMOR), A., 1118.
- by activated charcoal (ROWE), A., 345, 673.
- by glass (CRESPI and MOLES), A., 1200.
- of binary mixtures of gases (PALMER), A., 239.
- of ions (AUDUBERT and QUINTIN), A., 347.
- by colloidal particles (RINDE), A., 347.
- influence of non-electrolytes on (SEN), A., 576.
- in relation to their coagulative power (SEN), A., 794.
- at water surfaces (FRUMKIN, REICHSTEIN, and KULVARSKAJA), A., 1091.
- of neutral molecules, influence of the electric field on (FRUMKIN), A., 347; (FRUMKIN and OBRUTSHEVA), A., 674.
- of poisons on charcoal (DINGEMANSE and LAQUEUR), A., 541.
- from solutions (BANCELIN), A., 19; (CHARRIOU), A., 899; (SABALITSCHKA and ERDMANN), B., 419.
- from aqueous solutions (DUBININ), A., 1090.
- of small quantities of substances (HAHN, ERBACHER, and FEICHTINGER), A., 1092.
- by alumina (MUNRO and JOHNSON), A., 347.
- by alumina gels (PERRY), A., 19.
- by charcoal (OGAWA; MILLER), A., 898.
- from solutions (MILLER), A., 1090.
- from viscous media (WEISSENBERGER, BAUMGARTEN, and HENKE), A., 789.
- by animal charcoal (ROSSI and BASINI), A., 1091.
- on large molecules in solutions (MARINESCO), A., 673.
- by insoluble precipitates (HÜTTIG and MENZEL), A., 900.
- on solids (GAMER), A., 1091.
- by yeast-phosphoprotein sols (RIWLIN), A., 1092.
- electric (MOKRUSCHIN and ESSIN), A., 573.
- negative (GOARD), A., 20; (RAKUZIN and NESMEJANOV), A., 119.
- selective, of colloids (HUGOUNENQ and LOISELEUR), A., 1091.
- true and apparent (PAYLOV), A., 1201.
- wetting (BARTSCH), A., 572.
- quantitative analysis by (LORENZ), A., 347.
- of colloids in quantitative analysis (EIGENBERGER), A., 701.
- Adsorption equation, Gibbs', verification of (SCHOFIELD), A., 572.
- Adsorption isotherms (GORBATSCHEV), A., 119; (TAMAMUSHI), A., 1201.
- and isosteres (COOLIDGE), A., 1002.
- Adzuki subtrilobata. See Beans, adzuki.

- Zenigmatite*, composition of (GOSSNER), A., 594.
Zerolith from the Côte-d'Or (LACROIX), A., 816.
 Aeroplanes, dopes for (DESCHIENS), B., 248.
 steel for engine valves of (GRARD), B., 92.
 Aerosols (GIBBS), B., 727.
 Aescigenin (VAN DER HAAR), A., 522.
 Ætiohemine, synthesis of (FISCHER and KLARER), A., 962.
*iso*Ætiohemine, and its copper salt (FISCHER and HALBIG), A., 963.
 Ætiophyllin, synthesis of (FISCHER and KLARER), A., 962.
*iso*Ætiophyllin (FISCHER and HALBIG), A., 963.
 Ætioporphyrin, synthesis of, and its copper salt (FISCHER and KLARER), A., 962.
 from cryptopyrrole and hæmopyrrole, and their hexabromides and copper and iron compounds (FISCHER, KLARER, and STEINMETZ), A., 1261.
*iso*Ætioporphyrin, and its bromides (FISCHER and HALBIG), A., 1256.
 synthesis of (FISCHER and HALBIG), A., 963.
 Affinity, chemical (CREHORE), A., 561.
 residual, and co-ordination (MORGAN and SMITH), A., 600; (MORGAN, CARTER, and HARRISON), A., 1003; (MORGAN and BURSTALL), A., 1027.
 After-damp, detection of carbon monoxide in (WEIN), B., 225.
 Agalma black 10 B, standardisation of (APPEL, BRODE, and WELCH), B., 656.
 commercial, subsidiary dyes in (BRODE), B., 702.
 Agave pulp, as a source of industrial alcohol (BAUD), B., 642.
 Age, old, chemistry of (DHAR), A., 538.
 Aglucones, cardiac, association of double linking with lactone group in (JACOBS, HOFFMANN, and GUSTUS), A., 1250.
 Agriculture, chemical investigations on (MÜNTER), B., 959.
Agrostemma githago (corncockle), constituents of seeds of (WEDEKIND and KRECKE), A., 982.
 Air, ionisation of, with X-rays and cathode rays (KULENKAMPFF), A., 769.
 mobility of ions in (TYNDALL and PHILLIPS), A., 877.
 thermal conductivity of (SCHNEIDER), A., 462, 785.
 effect of temperature on viscosity of (WILLIAMS), A., 234; (RANKINE), A., 671.
 measurement of flow of (MATTFNER), B., 775.
 cooling and moistening of (YAMAMOTO), (P.), B., 34*.
 liquefaction and rectification of (CICALI), (P.), B., 406.
 liquid, separation of, into its constituents (R. F. and R. K. E. MEWES), (P.), B., 823.
 filters for (NATIONAL AIR FILTER Co. and BIRKHOFF), (P.), B., 937.
 filtering material for (REED AIR FILTER Co. and HEGAN), (P.), B., 2*.
 operation of oil-sprinkled filters for (ALLNER), B., 144.
 separation of dust from (TAYLOR), (P.), B., 145*.
 with metal filters (BERLOWITZ), B., 31.
 centrifugal apparatus for separation of solid impurities from (STOTT), (P.), B., 904.
 purification of, from ammonia (PERROTT and YABLICK), (P.), B., 726.
 elimination of hydrogen sulphide from (KOPFERS Co.), (P.), B., 39.
 krypton and xenon content of (RABINOVITSCH), A., 808; (MOUREU and LEPAGE), A., 933.
 recovery of neon and helium from (GES. F. LINDE's EISMASCHINEN), (P.), B., 322.
 distribution of radioactive products in (SCHMIDT), A., 656.
 electrolysis of (KELLY), (P.), B., 592.
 electrical treatment of, for combustion of oil fuels (SARGENT, LEGAT, and WITTELTON), (P.), B., 1004.
 deoxygenation of, by combustion of sulphur or its compounds (CHIMURA), (P.), B., 1041*.
 blasts for metallurgical processes, increase of oxygen content of (WAGNER and THOMAS), (P.), B., 548.
 heating of, for use in dryers (DARRAH), (P.), B., 345.
 city, measurement of smoke pollution of (OWENS), B., 221.
 of workshops, determination of carbon monoxide in (SCHOOFS), B., 934.
 determination of bacterial content of (LURGI APPARATEBAUGES.), (P.), B., 222.
 determination of carbon monoxide in (SAYERS and YANT), A., 100.
 determination of dust in (ALLNER), B., 111; (D'ARSONVAL and BORDAS), B., 390; (KATZ, SMITH, and MYERS), B., 726.
 determination of radon in (BÉROUNNEK), A., 220.
 Ajkaite (ZECHMEISTER and VRABÉLY), A., 934.
 Ajowan cake, as fertiliser (REGE), B., 335.
 "Aktivin," use of, in finishing of printed fabrics (FEIBELMANN), B., 484.
 use of, in printing of textiles (WEGENER), B., 662.
 bleaching of artificial silk with (FEIBELMANN), B., 483.
 use of, in volumetric analysis of mordants (JANGMICH and HACKL), B., 913.
 dl-Alanine, resolution of (KIPPING and POPE), A., 388.
 butyl esters, and their salts (MORGAN), A., 276.
 1-Alanyl-1-alanylglycine, and its chloroacetyl derivative (LEVENE and PFALTZ), A., 1259.
 Alanylarsanilic acid (GIEMSA and TROPP), A., 1162.
 Alanylglycylarsanilic acid (GIEMSA and TROPP), A., 1162.
 1-Alanylglycine, 1-bromo-, propionyl derivative (LEVENE and PFALTZ), A., 1259.
 Alsapogenin acid, reduction of (KARRER and LIER), A., 401.
 Alsapogenin, oxidation of (KARRER and LIER), A., 401.
 Albumin, X-ray structure of crystals of (OTT), A., 1084.
 method for rendering visible molecular aggregates of (BECHHOLD and VILLA), A., 351; (BECHHOLD), A., 902.
 and globulin in serum proteins (ARND and HAFNER), A., 421.
 compounds containing arsenic (BALLY and HACO-GES. A.-G. BERN), (P.), B., 514*.
 egg-, crystallisation and rotation of (CHAPMAN), A., 189.
 heat coagulation of (MASTIN and REES), A., 1049.
 coagulation of, by ultra-violet light and heat (CLARK), A., 1163.
 heat denaturation of (LEWIS), A., 1204.
 drying and congelation of (LIBERSA), (P.), B., 296.
 diffusion velocity of (GRÖH), A., 903.
 influence of salt concentration on acid-binding capacity of (LINDERSTRÖM-LANG and LUND), A., 1101.
 egg- and serum-, action of radium rays on (FERNAU), A., 367.
 serum-, action of heat on (SPIEGEL-ADOLF), A., 352.
 Albumins, isolation of, from oleaginous materials (DAVID and FÉLIZAT), (P.), B., 1020*.
 manufacture of (KAHN and SOC. FRANÇ. PROD. ALIMENTAIRES AZOTÉS), (P.), B., 297*.
 effect of heat on (SPIEGEL-ADOLF), A., 631.
 Albuminous substances, nitrogenous extracts from (SOC. FRANÇ. PROD. ALIMENTAIRES AZOTÉS), (P.), B., 993.
 Albumose-silver (MANNION and CURTAZ), B., 214.
 Alcohol. See Ethyl alcohol.
 Alcohol, C₂H₅OBr, from α-bromoacetaldehyde and magnesium acetylde (LESPIEAU), A., 936.
 C₂H₅O, from benzaldehyde and magnesium acetylde (LESPIEAU), A., 936.
 C₁₂H₂₂O₂, from elemol (RUZICKA and PFEIFFER), A., 1148.
 Alcohols, preparation of, from ethers (MERCK and KRAUSS), (P.), B., 173.
 anhydrous, preparation of (RODEBUSCH and U.S. INDUSTRIAL ALCOHOL Co.), (P.), B., 609.
 synthesis of (TERENTIEV), A., 268; (TERENTIEV, GRIBKOV, and TITOV), A., 332.
 manufacture of (CARTER, COXE, and KARPEN & BROS.), (P.), B., 217.
 from halogenated aldehydes (FARB. v. BAYER & Co.), (P.), B., 386*.
 from hydrocarbons (BROOKS), B., 298*.
 with acetone by fermentation (STRANGE), (P.), B., 604.
 isolation of, from mixtures (DEPPE SÖHNE and ZEITSCHL), (P.), B., 691.
 interchange of groupings between aldehydes or ketones and (PONNDORF), A., 520.
 effect of unsaturation on activity of hydroxyl groups in (HUSTON and SAGER), A., 944.
 and their esters, refractivity of, in water and cotton-seed oil (MUNICH), A., 749.
 infra-red absorption spectra of (BOVINO), A., 775.
 photolysis of (VOLMAR), A., 920.
 temperature of maximum density of mixtures of water with (McHUTCHISON), A., 895.
 miscibility of quaternary mixtures of water and (BRUN), A., 895.
 adsorption agent for purification of (RIERI-WERK RICHTER), (P.), B., 295.
 crude, from oil gas, purification of (TAYEAU and TEXAS Co.), (P.), B., 1006.
 dehydration of (NAMETKIN and BRIUSOVA), A., 420.
 dehydrogenation of (ZETZSCHE and ZALA), A., 614.

- Alcohols, catalytic action of reduced copper on (HARA), A., 918.
 decomposition of, over catalytic zinc oxide (ADKINS and LAZIER), A., 807.
 action of aluminium arsenide, selenide and telluride, and magnesium arsenide on (NATTA), A., 1023.
 acetylenic, preparation of (LESPIEAU), A., 935.
 unsaturated aldehydes from (RUPE and KAMBLI), A., 821.
 aliphatic, effectiveness of, in attracting flies (COOK), B., 518.
 organic compounds of higher molecular weight from carbon monoxide and (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 512.
 halogenated, manufacture of (FARBENFABR. FORM. F. BAYER & Co.), (P.), B., 645.
 higher, preparation of, catalytically (CASALE), (P.), B., 692.
 and their esters, from carbon oxides and hydrogen, purification of (I. G. FARBENIND.), (P.), B., 901.
 hydroaromatic, analysis of (NOLL), B., 994.
 of the hydroaromatic and terpene series (GOUGH, HUNTER, and KENYON), A., 1032.
 polyhydric, reactions of, with acetone (GRÜN and LIMPÄCHER), A., 632.
 condensation products of, with aliphatic-aromatic ketones (ALTFEGG, CHERMETTE, and SOC. CHIM. USINES DU RHÔNE), (P.), B., 462.
 halogenated, preparation of esters of (ROSENZWEIG and LEGERLOTZ), (P.), B., 964.
 primary, with tertiary radicals, dehydration of (FAVORSKI and ZALESSKI-KIBARDINE), A., 45.
 aliphatic, action of Japanese acid earth with (INOUE), A., 1216.
 secondary, halogenation of (LEVENE and MIKESKA), A., 45.
 tertiary, formation of ketones from (GRIGNARD and CHAMBRET), A., 268.
 aliphatic, properties and industrial possibilities of (DAVIS and MURRAY), B., 849.
 α -naphthylcarbimide as a reagent for (BICKEL and FRENCH), A., 517.
 determination of (FISCHER and SCHMIDT), A., 632.
 determination of, in essential oils, by means of magnesium methyl iodide (ZEREVITINOV), B., 720.
 Alcohols, nitro-, aliphatic (SCHMIDT, ASCHERL, and MAYER), A., 45.
 Alcoholates, dissociation pressures of (BONNELL and JONES), A., 357.
 Alcoholysis, of salts of weak acids and weak bases (GOLDSCHMIDT and MATHIESEN), A., 577.
 Alcohometer, Dickinson (VUILLEUMIER), B., 381.
 Aldazines, reduction of, by aluminium amalgam (MACUREVITSCH), A., 824.
 Aldehydes, preparation of, from oxidation of acid hydrazides (KALB and GROSS), A., 614.
 from sugars (KLEIN), A., 600.
 various solvents used in catalytic synthesis of, from acid chlorides (ZETZSCHE, ENDERLIN, FLÜTSCH, and MENZI), A., 405.
 manufacture of, from cacti (SINCLAIR), (P.), B., 252.
 action of ultra-violet light on (FRANKE and SIGMUND), A., 292.
 rotation of mixtures of optically active organic acids with (PASSERINI), A., 226.
 reactive nature and electromotive force of (ARENSON, ROLLER, and BROWN), A., 687.
 recovery of, from gases (BERL), (P.), B., 964.
 catalytic hydrogenation of, in presence of platinum black (FAILLEBIN), A., 50.
 electrolytic reduction of (SHIMA), A., 147.
 interchange of groupings between alcohols and (PONNDORF), A., 520.
 isomerisation of, to ketones (DANILOV and VENUS-DANILOVA), A., 519.
 compounds of amino-acids with (BERGMANN and ZERVAS), A., 603.
 condensation of, with diphenylisothiohydantoin (HANN and MARLEY), A., 623.
 hydrogen sulphites of (RASCHIG), A., 598; (RASCHIG and PRAIL), A., 939; (FUCHS), A., 952.
 reduction of oximes and phenylhydrazones of (MACUREVITSCH), A., 824.
 condensation products of phenols and (SHONO), B., 595.
 electrical properties of (SHONO), B., 680.
 Aldehydes, nutrition of plants with (SABALITSCHKA and WEIDLING), A., 871, 1182.
 aliphatic, ultra-violet absorption spectra of (SCHOU), A., 556.
 resinification of (HERRMANN, DEUTSCH, and CONSORT. FUR ELEKTROCHEM. IND. G.M.B.H.), (P.), B., 1021*.
 condensation of 2-aminopyridine with (SCHMID and BECKER), A., 845.
 condensation of salicylamide with (MOUCKA and RÖGL), A., 626.
 aromatic, solution of copper in pyridine solutions of (MOHLER), A., 71.
 action of sulphur on (SZPERL and WYDRZYCKI), A., 952.
 complex, decomposition of (MAILHE), A., 952.
 heterocyclic (ROJAHN and TRIELOV), A., 78.
 Rosenmund's synthesis applied to (ROJAHN and SCHULTEN), A., 842; (ROJAHN and KÜHLING), A., 846.
 saturated, preparation of, from unsaturated (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 108.
 disubstituted, isomerisation of, to ketones (DANILOV and VENUS-DANILOVA), A., 726.
 trisubstituted, conversion of, into disubstituted ketones (ORÉKHOV and TIFFENEAU), A., 171.
 colour reactions of heterocyclic compounds with (LIEBEN and POPPER), A., 959.
 reaction of, with tryptophan (KOMM), A., 959.
 determination of, in alcoholic liquors (BAILEY), B., 562.
 Aldehyde-acids, esters, preparation and use of (NOLLER and ADAMS), A., 712.
 α -Aldehydobenzeneazoacetanilide (SEIDEL), A., 1141.
 λ -Aldehydodecoic acid, and its methyl ester, pinacol (NOLLER and ADAMS), A., 597.
 methyl ester, and its semicarbazone (NOLLER and ADAMS), A., 712.
 2-Aldehydo-4-methyl-3-ethylpyrrole-5-carboxylic acid, ethyl ester, and its oxime (FISCHER and ERNST), A., 622.
 3-Aldehydo-2-methyl-4-ethylpyrrole-5-carboxylic acid, ethyl ester (FISCHER and KLARER), A., 1261.
 2-Aldehydo-3-methylpyrrole (FISCHER and WIEDEMANN), A., 736.
 5-Aldehydo-2-methylpyrrole-3-carboxylic acid, and its derivatives (FISCHER and SCHUBERT), A., 736.
 Aldehydomethylpyrrolecarboxylic acids, and their derivatives (FISCHER and ERNST), A., 621.
 Aldehydo-3-methylpyrrole-4-carboxylic acids, and their ethyl esters, and derivatives (FISCHER and WIEDEMANN), A., 736.
 2-Aldehydo-4-methylpyrrole-3:5-dicarboxylic acid, and its ethyl ester (FISCHER and ERNST), A., 621.
 ethyl ester, and derivatives (FISCHER and HALBIG), A., 621.
 6-Aldehydononoic acid, methyl ester, and its semicarbazone (NOLLER and ADAMS), A., 712.
 7-Aldehydo-octic acid, and its methyl ester, and semicarbazone (NOLLER and ADAMS), A., 712.
 4-Aldehydo-1:2-phthalic acid, and its derivatives (PERKIN and STONE), A., 64.
 4-Aldehydo-1:2-phthalide, and its phenylhydrazone (PERKIN and STONE), A., 64.
 γ -Aldehydopropionic acid, 2:4-diiodophenylhydrazone 2:4-diiodophenylhydrazide (CHEM. FABR. FORM. SCHERING), (P.), B., 852.
 2-Aldehydoterephthalic acid, and its derivatives (PERKIN and STONE), A., 64.
 Alder. See *Sambucus nigra*.
 black. See *Alnus glutinosa*.
 green. See *Alnus viridis*.
 Aldol (β -hydroxybutaldehyde), action of *Bacterium ascendens* on (BINDER-KOTRBA), A., 1062.
 Aldols, manufacture of (HERRLY and CARBIDE & CARBON CHEMICALS CORP.), (P.), B., 995.
 Aldoses, determination of, iodometrically (PAUCHARD), A., 535.
 Aldosecarbamides, preparation of (HELFERICH and KOSCHE), A., 273.
 Aldoximes, isomeric, dissociation constants of (BRADY and GOLDSTEIN), A., 1039.
 methyl ethers of (BRADY, DUNN, and GOLDSTEIN), A., 1141; (BRADY and GOLDSTEIN; BRADY and DUNN), A., 1142.
 Aleurites, oil from species of (GEORGI), B., 1020.
 Aleurites trisperma, oil from (GEORGI), B., 1019.
 Alfa, treatment of (SOC. ANON. A.L.F.A. APPLICAZIONI LAVORAZIONI FIBRA ALFA E AFFINI), (P.), B., 1009.
 Alfalfa. See Lucerne.

- Algæ, oxydases of** (GERTZ), A., 645.
arctic brown, exposed at low tide, gaseous exchanges in (KRASCHENINNIKOV), A., 645.
See also Seaweed.
- Algin, reserve pastes for printing and batik dyeing from** (KUNIG), B., 784.
- Alimentary canal, action of choline on** (ABDERHALDEN and PAFFRATH; ABDERHALDEN, PAFFRATH, and SICKEL), A., 97.
- Aliphatic compounds, volume change in formation of, at absolute zero** (HERZ), A., 559.
autoxidation of, in presence of copper (TRAUBE and LANGE), A., 258.
higher, synthesis of (G. M. and R. ROBINSON), A., 1024.
six-carbon chain, disruption of (v. BRAUN, LEISTNER, and MÜNCH), A., 1128.
- Alipine, and its salts** (SEVILLA), A., 963.
hydrochloride (SEVILLA), A., 744.
- Alizarin, bismuth salt** (MASCHMANN), A., 311.
- Alizarin, nitro-, adsorption by** (LIEPATOV), A., 571, 789.
- Alkali aluminates, production of** (RHEINANIA VEREIN. CHEM. FABR.), (P.), B., 708.
amides, manufacture of (EWAN), (P.), B., 192*.
reactions of elements with (BERGSTROM), A., 254.
azides and cyanates, comparison of the physical properties of (CRANSTON and LIVINGSTONE), A., 458.
bromides, equilibria of ethyl alcohol with (BONNELL and JONES), A., 357.
action of, on cupric bromide in acetic acid solution (DENIGÈS), A., 922.
- carbonates, manufacture of** (BRADLEY and MCKEEFFE), (P.), B., 321.
from alkali sulphates (FRIEDRICH), (P.), B., 915.
decomposition of alkaline-earth phosphates by (RAQUET), A., 136.
action of boric acid on (VANZETTI), A., 249.
acid carbonates and hydroxides, manufacture of (HENE), (P.), B., 630.
- perchlorates, optical constants of** (TUTTON), A., 883.
- chlorides, electrolysis of** (BAMBERGER and NUSSBAUM), (P.), B., 135; (KLOPSTOCK), (P.), B., 164; (GERLACH), (P.), B., 284; (ZELLSTOFF-FABR. WALDHOF and TAUSSIG), (P.), B., 592.
- electrolysis of solutions of** (KÖNIGSBERGER ZELLSTOFF-FABR. & CHEM. WERKE KOHLYT and SCHLUMBERGER), (P.), B., 757.
- electrical transport of water in solutions of** (VELÍŠEK), A., 687.
decomposition of (KERSTEN), (P.), B., 88.
and nitrates, action of oxalic acid on (TANANAEV), A., 694.
- chromates, double chromates of rare-earth metals and** (CAROBBI), A., 810.
- cyanides, velocity of hydrolysis of** (ZAWIDZKI and VITKOVSKI), A., 363.
- halides, molecular refraction of** (HERZFELD and WOLF), A., 11.
coloured, absorption spectra of (FLECHSIG), A., 658.
optical and chemical behaviour of (HANTZSCH), A., 883.
critical temperatures and pressures of (VAN LAAR), A., 341.
vapour pressure and thermal properties of (FLOCK and ROEBUSH), A., 198.
compressibility of (SLATER), A., 1198.
surface energy of (BIEMÜLLER), A., 1086.
colouring of crystals of (GYULAI), A., 885.
possible metastability of (LANGE and DÜRR), A., 341.
compounds of, with metallic halides (VOURNAZOS), A., 372.
equilibrium of the formation of complexes of mercuric cyanide with (BOURION and ROUYER), A., 1005.
equilibria of silver halides with (SHEMITSCHUSINI), A., 684.
- hexachloroiridates, action of α -picoline on** (GUILLOT), A., 958.
- hexachloroiridites, action of α -picoline on** (GUILLOT), A., 737.
- hydroxides, recovery of, from solutions** (GRIFFIN and VISCOSÉ Co.), (P.), B., 274*; (VISCOSÉ Co.), (P.), B., 486.
velocity of adsorption of, by starch and cellulose (LIEPATOV), A., 673.
electrometric studies of the reactions between silver nitrate and (BRITTON), A., 135.
- hypo-chlorites and chlorides, manufacture of solid mixtures of** (OPRÉ), (P.), B., 1013.
- hyposulphites, manufacture of** (FARBENFABR. VORM. BAYER & Co.), (P.), B., 439, 915.
- liquors obtained in refining of lead, purification of** (HARRIS), (P.), B., 236.
- Alkali metals, pure, preparation of** (SUHRMANN and CLUSIUS), A., 589; (SOC. D'ELECTRO-CHIMIE, D'ELECTRO-METALLURGIE, ET DES ACIÉRIES ÉLECT. D'UGINE), (P.), B., 792.
electrolytic production of (HAYNES), (P.), B., 922.
absorption spectra of (SOWERBY and BARRATT), A., 213.
Stark effect for (THOMAS), A., 3, 217.
duration of light emission from (KERSCHBAUM), A., 652; (RUPF), A., 875.
absorption coefficients of vapours of (HARRISON), A., 1070.
variation of photo-electric effect of, with temperature (IVES and JOHNSRUD), A., 217.
radioactivity of (PATTON and WALDBAUER), A., 772.
positive rays in vacuum tubes from vapours of (IVES), A., 218.
magnetic moments of atoms of (TAYLOR), A., 1075.
molecular susceptibilities of (SUCKSMITH), A., 782.
electrical conductivity of, in liquid ammonia and in methyl-amino (GIBSON and PHILIPS), A., 360.
oxidation potentials of, in liquid ammonia (FORBES and NORTON), A., 1105.
effect of high pressure on physical properties of (BRIDGMAN), A., 232.
crystalline and amorphous states of (BIDWELL), A., 562.
co-ordinated compounds of (SIDGWICK and BREWER), A., 71.
double sulphates of the rare earths with (ZAMBONINI and CAROBBI), A., 137, 255; (ZAMBONINI and RESTAINO), A., 696, 1015.
analysis of (ATO and WADA), A., 929.
detection and separation of (DIAZ DE RADA and GASPAR Y ARNAL), A., 702.
- phosphates, manufacture of** (HOFF and GRASELLI CHEMICAL Co.), (P.), B., 360.
double compounds of aliphatic amino-acids and (BOEHRINGER & SOEHNE), (P.), B., 464.
salts, natural, treatment of (COSMIC ARTS), (P.), B., 51; (LAMBERT), (P.), B., 321.
silicates, soluble, manufacture of (NORSK HYDRO-ELEKTRISK KVAELSTOFAKTIESELSKAB), (P.), B., 320.
powdered, manufacture of (FINZI), (P.), B., 320.
sulphates, manufacture of (STEIN), (P.), B., 788.
sulphides, solubility of horn in (PULEVKA), A., 853.
polysulphides, stable solutions of (GLÜCKSMANN), (P.), B., 237.
solutions of, containing colloidal sulphur (RUSSELL), (P.), B., 126.
bisulphites and metabisulphites, manufacture of (LEROY), (P.), B., 822.
thiosulphates, production of (RÜSBERG and RHEINANIA VER. CHEM. FABR.), (P.), B., 538.
silver thiosulphates, preparation of (CHEM. FABR. SCHLEICH and ROSENHEIM), (P.), B., 321.
- Alkalis, determination of, in presence of alkaline earths** (BÜRSTENBINDER), B., 742.
determination of, in cacao-fat (PRESCHER and CLAUS), B., 285.
determination of, in wool (HIRST and KING), B., 266.
- Alkali-blue sols, containing tannins, coagulation of, by electrolytes** (FREUNDLICH and MITSUKURI), A., 794.
- Alkaline earth amides, reactions of elements with** (BERGSTROM), A., 254.
bromides and iodides, equilibria of ethyl alcohol with (BONNELL and JONES), A., 357.
carbonates, roasting of ores containing (APOLD and FLEISSNER), (P.), B., 710.
solubility of, in hydroxylamine solutions (HAHN and BRUNN-GÄSSER), A., 672.
colloidal solutions of (v. BURZÁGH), A., 469, 1096.
and magnesium carbonate, colloidal, reciprocal protective effect of (STELLA), A., 1204.
chlorides, production of (VER. CHEM. & MET. PRODUKTION), (P.), B., 322.
permanganates, barium manganate for manufacture of (WILSON, PARSONS, and CHRISHOLM), (P.), B., 743.
metals, electrolytic production of (CHEM. FABR. KALK, OEHME, and HERRMUTH), (P.), B., 245.
spectra of (WENTZEL), A., 102.
alloys of, with nickel, platinum, or tungsten (BOVING and WESTERN ELECTRIC Co.), (P.), B., 133.
molybdates, isomorphism of, with rare-earth molybdates (ZAMBONINI and LEVI), A., 13; (ZAMBONINI), A., 113.
nitrides, manufacture of (UHDE), (P.), B., 322.

- Alkaline earth oxides, reactions of, on heating with sulphides, carbides, silicides, and phosphides (HEDVALL), A., 368; (HEDVALL and NORSTRÖM), A., 695.
 peroxides, production of (SCHULZE), (P.), B., 322.
 phosphates, decomposition of, by alkali carbonates (RAQUET), A., 136.
 salts, action of superheated steam on (ROBINSON, SMITH, and BRISCOE), A., 587.
 sulphates, purification of (ACKERMANN), (P.), B., 321.
 decomposition of (ZAWADZKI, KONARZEWSKI, LICHTENSTEIN, SZYMANKIEWICZ, and WACHSZEJSKI), A., 368, 923.
 sulphides, treatment of (RHENANIA VEREIN CHEM.-FABR., MARWEDEL, and SCHOLZ), (P.), B., 52.
 polysulphides, preparation of stable solutions of (GLÜCKSMANN), (P.), B., 915.
- Alkaline earths, determination of, in cacao-fat (PRESCHER and CLAUS), B., 285.
- Alkaloids, calumba root (SPÄTH and BURGER), A., 963.
 from cinchona. See Cinchona.
 corydalis. See Corydalis.
 lupin, toxicity of (COVON), A., 540.
 from yohimba (HAHN and BRANDENBERG; WARNAT), A., 1263.
 infra-red absorption spectra of (BELL), A., 1264.
 dissociation constants and solubility of (KOLTHOFF), A., 125.
 acceleration of rubber vulcanisation by (EATON and BISHOP), B., 375.
 extractors for solutions of (WATKINS and PALKIN), B., 963.
 reactions of nitro-compounds with (NAVARRO), A., 965.
 reactions of, with nitroso-compounds (NAVARRO), A., 1048.
 action of, with serum (BEUTNER), A., 1267.
 precipitation of proteins by lead chloride in toxicology of (MAGNIN), A., 1273.
 toxic derivatives of (POLONOVSKI and POLONOVSKI), A., 82.
 compounds of, manufacture of (HACO-GES. A.-G.), (P.), B., 253.
 preparations of, production of, from drugs (CHEM. FABR. "NORGINE," STEIN, and WIECHOVSKI), (P.), B., 901.
 amino-oxides of (POLONOVSKI), A., 1160.
 reagent for (ROSENTHALER), A., 186.
 alkali xanthates as reagents for (NAVARRO), A., 746.
 furfuraldehyde reaction for (EKKERT), A., 533.
 indicators for titration of (WALES), B., 461.
 potentiometric quantitative analysis of solutions of (KRANTZ), B., 801.
 determination of, electrometrically (WAGENER and MCGILL), A., 967; (KOLTHOFF), B., 74.
 determination of, electrometrically, without using hydrogen electrodes (POPOV and MCHENRY), A., 750.
 determination of, in drugs (FRIGDOR), B., 383.
 determination of, in lupins (MACH), B., 214.
 determination of, in opium (RAKSHIT), B., 994.
- Alkyl bromides and iodides, identification of (MARVEL, GAUERKE, and HILL), A., 144.
 chlorides, preparation of (WEBB and CARBIDE & CARBON CHEMICALS CORP.), (P.), B., 77; (THURN), (P.), B., 898.
 compounds of elements, periodicity in properties of (v. GROSSE), A., 555.
 halides, manufacture of (WIBAUT), (P.), B., 721*.
 inflammability of, and their influence on inflammability of hydrogen, ether, and hydrocarbons (TANAKA and NAGAI; NAGAI), A., 1106.
 complex salts of quinoline, mercuric halides and (DEHN and COPE), A., 1257.
 iodides, reactions of sodium benzyl oxide with (GOLDSWORTHY), A., 691.
 sulphates, sulphides, sulphites, sulphones, and sulfoxides, constitution and physical data of (STRECKER and SPITALER), A., 1082.
 hydrogen sulphates, preparation of, and their salts with amines (POPELIER), A., 1123.
 disulphides, action of sodium on (MOSES and REID), A., 497.
- Alkylamines, halogenated, kinetics of the conversion of, into heterocyclic compounds (FREUNDLICH and KROEPFELIN), A., 1010.
- Alkylanthracenes and transannular tautomerism (BARNETT and MATTHEWS), A., 1030.
- Alkylation by means of thallium compounds (FEAR and MENZIES), A., 604.
- β -Alkylcinnamic acids, isomerism of (JOHNSON and KON), A., 1245.
- N*-Alkylideneamino-acids, synthesis and hydrogenation of (SCHEIBLER and NEEF), A., 942.
- Alkyloxypyrazoles, formation and nitration of (BACKER and MELJER), A., 741.
- Alkylphenols, and their aldehydes, alkylation of (HENRY and SHARP), A., 1162.
- Alkylthiocarbamides, synthesis of (DYSON and HUNTER), A., 718.
- Alkylvinylcarbinols, catalytic dehydration of (PRÉVOST), A., 496; (DUMOULIN), A., 710.
 catalytic oxidation of, in presence of palladium black (DELABY), A., 272.
 conversion of, into β -alkylallyl alcohols (DELABY), A., 45.
- Allanite, Japanese (SATO), A., 934.
 analysis of (KIMURA), A., 144.
- Allantoic acid in plants (FOSSE), A., 548.
- Allantoin, determination of, in urine (CHRISTMAN), A., 1284.
- Allophanic acid, cholesteryl ester (FABRE), A., 1283.
 ethyl ester, potassium derivative (BLAIR), A., 277.
- Allophanic acids, substituted, preparation of alkyl esters of (MERCK and DIEHL), (P.), B., 931.
- Allophanylacetic acid, ethyl esters and amide of (FROMM), A., 716.
- Alloxanic acid, salts and esters of (BILTZ and LACHMANN), A., 1046, 1047.
- Alloys (HUME-ROTHERY), A., 356; (KINGSBURY and WESTERN ELECTRIC CO.), (P.), B., 18*; (FONTANE and CONTI), (P.), B., 64*; (HAAGN and HERAEUS), (P.), B., 134*; (GRIN and SOC. ANON. DE COMMENTRY, FOURCHAMBAULT ET DECAZEVILLE), (P.), B., 283*, 445*; (SHIELDS and SHIELDS & MOORE), (P.), B., 548.
- X-ray structure of (HOLGERSSON), A., 459; (PHEBUS and BLAKE), A., 1083.
- colour and structure of (CHIKASHIGE, KURIYAMA, MIYOSHI, TEISCHÖ, NOSÉ, TAKEUCHI, and KAO), A., 896.
 preparation of (PACZ), (P.), B., 64*.
 manufacture of (DANIELI, KALLING, and AKTIEBOLAGET FERROLEGERINGAR; WALTER), (P.), B., 18*; (INTERNAT. NICKEL CO.), (P.), B., 97*; (WESTERN ELECTRIC CO.), (P.), B., 412; (GRÖNWALL), (P.), B., 548; (CROESE), (P.), B., 674; (KORSUNSKY), (P.), B., 755; (INTERNAT. NICKEL CO. and MUDGE), (P.), B., 884.
 manufacture of filaments of (BOVING and WESTERN ELECTRIC CO.), (P.), B., 133.
 quenching of (PORTEVIN and CHEVENARD), B., 546.
 tensile strength of, under a statical load (WELTER), B., 546.
 concentration tests on (TIMMS, PARSONS, CARNOCHAN, and GODARD), B., 672.
 effect of temperature on behaviour of, in notched-bar impact test (GREAVES and JONES), B., 328*.
 cathodic pulverisation of (MAZUR), A., 248.
 thermo-electric properties of (CASWELL), A., 1196.
 molten, electrolysis of (KREMANN and HRASOVEC), A., 477; (KREMANN, KRIEGHAMMER, and GRUBER-REHENBURG; KREMANN, KRIEGHAMMER, and TRÖSTER), A., 801; (KREMANN and BAUKOVAC), A., 801, 802; (KREMANN and DELLACHER; KREMANN and BAYER), A., 802.
 liquation in, and its possible geological significance (SMITH), B., 281.
 surface tension of (SAUERWALD and DRATH), A., 790.
 apparatus for demonstrating thermal transformations of (CHEVENARD), A., 42.
 viscosity of, at high temperatures (COURNOT and SASAGAWA), B., 161.
 influence of composition of, on fluidity (GUILLET and PORTEVIN), B., 983.
 Ludwig-Soret effect in (BALLAY), A., 1199.
 elastic properties of (CHEVENARD and PORTEVIN), B., 59.
 effect of cold-working and quenching on elastic properties of (PORTEVIN and CHEVENARD), B., 59.
 colloidal separations in (ANDREW and HAY), B., 328*.
 resisting oxidation at high temperatures (FLINTERMANN), (P.), B., 63.
 deoxidation of (PACZ), (P.), B., 97.
 resistance of, to nitric acid (THOMPSON), B., 1017.
 behaviour of, with plastilin and free sulphur (BAUER and ARNDT), B., 327.
 acid-proof, manufacture of (KEGG), (P.), B., 674.
 aero., specifications for (DANIELS), B., 326.
 Alpac (PETIT), B., 882.

- Alloys, bearing-metal (NEURATH, (P.), B., 62; (GOLDSCHMIDT), (P.), B., 62, 331, 590; (KAUL and HABERER), (P.), B., 134; (KARAFIAT; ACKERMANN), (P.), B., 197; (DOEBLIN), (P.), B., 331; (FALKENBERG), (P.), B., 368; (WILLIAMS and GEN. MOTORS RESEARCH CORP.), (P.), B., 496.
separation of constituents of (M. and L. MEYER and HÜTTENWERKE TEMPELHOF MEYER), (P.), B., 884.
incorporation of graphite with (CRIMP), (P.), B., 635.
binary, phase diagrams of (MŁODZIEJOWSKI), A., 25.
equilibrium diagram and magnetic susceptibility in (ENDO), B., 327.
chill-cast, resistant to acids and alkalis (SILLER), (P.), B., 549.
dental (VOGT and SMITH & SONS MANUF. CO.), (P.), B., 369.
analysis of (SWANGER), B., 1017.
die-casting (PACZ and ALUMINUM CO. OF AMERICA), (P.), B., 369; (PEIRCE, ANDERSON, and NEW JERSEY ZINC CO.), (P.), B., 885.
for dilatation pyrometry (CHEVENARD), B., 546.
ductile (REIGHARD), (P.), B., 711.
for electrical contacts (BELL TELEPHONE MANUF. CO.), (P.), B., 64; (GARDNER and AMER. TELEPHONE & TELEGRAPH CO.), (P.), B., 133.
hard, for tools (SIEMENS & HALSKE and FETKENHEUER), (P.), B., 549.
containing silicon and carbon (SIEMENS & HALSKE and FETKENHEUER), (P.), B., 549.
Heusler, crystal structure of (HARANG), A., 460.
high-speed (SCHULZ, JENGE, and BAUERFELD), B., 492.
lead-base anti-friction, influence of pouring temperature and mould temperature on properties of (ELLIS), B., 328*.
light, tempering of (WILLIAMS), (P.), B., 63.
magnetic (SMITH, POPPLEFORD, and GARNETT), (P.), B., 496*.
Muntz metal, microscopy of (PRATT), B., 883.
non-corrosive (WELLESLEY), (P.), B., 590.
non-ferrous industrial, thermal conductivities of (DONALDSON), B., 328*.
for pen-points (GOLDSMITH), (P.), B., 245.
printing type, hardening of (TRAVERS and HONOT), B., 672.
ternary (VALENTIN), B., 634.
constitution of (GUERTLER), B., 588.
for thermocouple casing (BROWN and BROWN INSTRUMENT CO.), (P.), B., 635.
containing tungsten carbide, manufacture of (GEN. ELECTRIC CO. and PATENT TREUHAND GES. FÜR ELEKTRISCHE GLÜHLAMPEN), (P.), B., 635.
determination of, by means of X-ray spectra (GÜNTHER and STRANSKI), A., 111.
separation of components of (BOSSIÈRE and ZANICOLI), (P.), B., 590.
Allyl alcohol, action of, on benzene in presence of aluminium chloride (HUSTON and SAGER), A., 944.
Allyl barium phosphate (ZETZSCHE and NACHMANN), A., 46.
bromide, 4-chloro- (V. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
N- ω -Allylallophanic acid, ethyl ester (MERCK and DIEHL), (P.), B., 931.
p-*N*-Allylaminobenzoic acid, β -diethylaminoethyl ester (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 107.
Allylaminonaphthalene compounds, ω -amino-, and their substitution products (FARB. V. BAYER & CO.), (P.), B., 433.
2-Allylamino-1:6:8-trinitronaphthalene (VAN DER KAM), A., 1240.
p-Allylbenzaldehyde (QUELET), A., 720.
Allylbenzene, *p*-bromo- (QUELET), A., 719.
2:3- and 3:4-dihydroxy- (KAWAI), A., 609.
N-Allyl-2:6-dimethylpiperidine, 4-hydroxy-, salts of (STAUDINGER), (P.), B., 897.
Allylguanidine, preparation of, and its picrolonate (SCHENCK and KIRCHHOF), A., 1129.
Allyl- Δ^1 -cyclohexenylacetone semicarbazone (KON and SMITH), A., 952.
1-Allylindazole-3-carboxylic acid (V. AUWERS and STRÖDTER), A., 529.
Allylnorcodeine, dibromo- (V. BRAUN, KÜHN, and SIDDIQUI), A., 851.
p-Allyloxybenzoic acid, diethylaminoethyl ester, tartrate, and its mercury compound (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 218.
4-Allyloxybenzoic acid, 3-bromo-, and its mercury derivative (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 218.
Allyloxyethylarsinic acid (ÉTAB. POULENC FRÈRES and OECHSLIN), (P.), B., 965.
5-Allyl-5-phenacylbarbituric acid (KEACH and HILL), A., 1259.
Allylphenol, β -bromo- (V. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
1-Allylpyridinium iodide (MAGIDSON and MENSCHIKOV), A., 844.
N- ω -Allylthioallophanic acid, ethyl ester (MERCK and DIEHL), (P.), B., 931.
Allylthiocarbimide (*allyl mustard oil*), determination of, in mustard flour (COLOMBIER), B., 606.
Allylthiocarbimide, β -bromo- (V. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
5-Allyl-*m*-4-xenol, and its derivatives (CLAISEN and TIETZE), A., 1035.
Almonds, sweet, extraction of essential oil from (GATTEFOSSÉ and SOC. FRANÇ. PROD. AROMATIQUES), (P.), B., 217.
legumin of (RAKUZIN and MASOHIKILISSON), B., 510.
Alniviridol (ZELLNER), A., 1281.
Alnus glutinosa (black alder), constituents of bark of (ZELLNER), A., 646.
Alnus rubra, British Columbian, tannin content of (CLARK and OFFORD), B., 683.
Alnus viridis (green alder), chemistry of bark of (ZELLNER), A., 1281.
Altitudes, high, effects of, on blood (FÖRSTER; FRITZ), A., 535.
effect of administration of carbon dioxide at (SCHNEIDER, TRUESDELL, and CLARKE), A., 1266.
Alum, history of the word (PATERSON), A., 708.
See also Aluminium potassium sulphate.
Alums, precipitation of proteins by means of (MAILLARD and WUNSCHENDORFF), A., 189, 762; (WUNSCHENDORFF), A., 762.
Aluminioxic acid, salts of, with optically active bases (CHILD, ROBERTS, and TURNER), A., 147.
Aluminium, discovery of (BJERRUM), A., 378.
fifty years' progress in (EDWARDS), B., 832.
structure of (COLLINS), A., 1191.
and its alloys, structure of, and their ageing (SACHS; LENNARTZ and HENNINGER; KROLL), B., 751.
pure, production of, from clay or alunite (YAMAZAKI), B., 882.
electrolytic production of (RAILSBACK), (P.), B., 163; (DOLTER), (P.), B., 834.
and its alloys (HAGLUND), (P.), B., 754.
electrolytic cell for production of (HOOPES and ALUMINUM CO. OF AMERICA), (P.), B., 63.
furnace for electrolytic production of (VEREINIGTE ALUMINIUMWERKE), (P.), B., 754.
apparatus for refining of (WINZENRIED and TIMENS), (P.), B., 330.
formation of carbon tetrafluoride in recovery of (TREADWELL and KÖHL), B., 671.
and its alloys, treatment of (DANIELS, ZIMMERMAN, and WATSON), (P.), B., 591*.
casting of (STRASSER), (P.), B., 547.
effect of cold working and annealing on physical properties of (MATSUMA), B., 93.
melting of, in an induction furnace (RHEINISCHE METALLWAREN- & MASCHINENFABR.), (P.), B., 246.
effect of rolling on crystal structure of (OWEN and PRESTON), A., 340.
crystals, behaviour of, under stress (GOUGH, HANSON, and WRIGHT), A., 666, 997.
absorption spectrum of (SUR and MAJUMDAR), A., 334.
band spectra of (ERIKSSON and HULTHÉN), A., 107, 334.
ultra-violet absorption spectrum of (FRAYNE and SMITH), A., 214; (BOWEN and MILLIKAN), A., 445; (BOWEN and INGRAM), A., 1070.
electrochemistry of (MÜLLER), A., 1105.
electromotive behaviour of (DE GRUYTER), A., 30.
effect of torsion on thermal and electrical conductivity of (CALTHROP), A., 565.
solubility of hydrogen in (BIRCHSHAW), A., 344.
molten, removal of gases from (STAUB), (P.), B., 97.
corrosion of, by water (HAASE), B., 671.
and its alloys, intercrystalline corrosion of (BIEGLER), B., 921.
effect of thermal and mechanical treatment of, on resistance to corrosion (WIEDERHOLT), B., 830.
and its alloys, electrolytic coatings for, and their resistance to corrosion by sea water (COURNOT and BARY), B., 1018.
metal coatings on (JIOTKA and COUSTEN), (P.), B., 496.

Aluminium, and its alloys, protection of, against corrosion by anodic oxidation (BENGOUGH and SUTTON), B., 882.
 electroplating of, with cadmium to resist corrosion (JONES and GEN. ELECTRIC CO.), (P.), B., 832.
 coating of, with copper (GÖTZ), (P.), B., 63.
 electrolytic deposition of nickel on (LANGBEIN-PFANHAUSER-WERKE), (P.), B., 197.
 and its alloys, coating of ferrous metals with (PFEL), (P.), B., 133.
 softening of iron articles plated with (JORDAN), (P.), B., 64*.
 rate of solution of (CENTNERSZWER and ZABLOOKI), A., 1010.
 and its alloys, boron in (HAENNI), B., 58, 672.
 cementation of copper and its alloys by (GUILLET), B., 633.
 behaviour of, towards iron at high temperatures (IRMAN), B., 544.
 cementation of ferrous alloys with (COURNOT), B., 365, 633.
 reaction regions for iron, sulphur, and (JORISSEN and ONGKIE-HONG), A., 909.
 influence of heat treatment of, on its solubility in hydrochloric acid (WIEDERHOLT; WERNER), B., 750.
 action of nitric acid on (UCHIDA and SASAKI), B., 633.
 material resembling (SCHMID), (P.), B., 754.
 solder for (SCHWALM), (P.), B., 197; (DEMEYER), (P.), B., 245; (DE MAY and PACKARD MOTOR CAR CO.), (P.), B., 590.
 use of, in preparation of ethyl iodide (JONES and GREEN), A., 1224.
 and its carbide, action of potassium thiocyanate with (BIESALSKI and VAN ECK), A., 1218.
 in acid soils (LINE), B., 891.
 "active," in soils (HARDY), B., 1024.
 effect of, on nitrogen-fixing bacteria (TRUFFAUT and BEZSONOFF), A., 545.
 Aluminium alloys (PAGE), (P.), B., 63; (KROLL), (P.), B., 245; (JOHNSTON, ARCHER, JEFFRIES, and ALUMINUM CO. OF AMERICA), (P.), B., 246; (JOHNSTON and ALUMINUM DIECASTING CORP.; CROSBY and ALUMINUM MANUFACTURERS), (P.), B., 330; (PACZ and ALUMINUM CO. OF AMERICA), (P.), B., 369, 884; (FULLER, BASCH, and GEN. ELECTRIC CO.), (P.), B., 444.
 preparation of (NEGUI), (P.), B., 63.
 manufacture of (RICHARDSON and WESTINGHOUSE LAMP CO.), (P.), B., 674; (BERTHÉLEMY and DE MONTBY), (P.), B., 1018.
 properties of (HYMAN), B., 328*.
 ageing process in (FRAENKEL), B., 634.
 aged, effect of artificial ageing on (MEISSNER), B., 326.
 influence of magnesium zincide on ageing of (SANDER and MEISSNER), B., 752.
 influence of ageing on corrodibility of (MEISSNER), B., 326.
 passivation and scale resistance in relation to corrosion of (CALLENDER), B., 328*.
 transformations of, and influence of deformation (GUILLET), B., 244*.
 influence of shrinkage on mechanical properties of (GUILLET), B., 950.
 die-casting of (MORTIMER), B., 326, 792*.
 refractory lining for crucibles for (FRARY and ALUMINUM CO. OF AMERICA), (P.), B., 330.
 for motor pistons (ALUMINIUM-IND. A.-G.), (P.), B., 330.
 wire made from (ALUMINIUM-IND. A.-G.), (P.), B., 197.
 light (HYBINETTE), (P.), B., 496.
 electrical conductivity of, as affected by atmospheric exposure (WILSON), B., 16.
 with antimony, magnesium, silver, and zinc, electrolysis of (KREMAN and DELLACHER), A., 802.
 with cadmium and magnesium (VALENTIN), B., 634.
 with calcium, electrical resistivity of (EDWARDS and TAYLOR), B., 883.
 with cobalt, sand-cast (DANIELS), B., 710.
 with copper (BRIT. ALUMINIUM CO., GROVER, and PHILLIPS), (P.), B., 132; (JEFFRIES, ARCHER, and ALUMINUM CO. OF AMERICA), (P.), B., 369.
 heat treatment of (GUILLET and GALIBOURG), B., 443.
 quenching of (GUILLET and GALIBOURG), B., 92.
 with copper or silver, structure of (WESTGREN and PHRAGMÉN), A., 1084.
 with copper and silicon, influence of ageing temperature on properties of (MEISSNER), B., 16.
 with copper and tin, copper-rich (STOCKDALE), B., 279, 792*.
 with copper and zinc, constitution of (HANSON and GAYLER), B., 328*.

Aluminium alloys with iron, expansion of, on solidification (MASING and DAHL), B., 750, 882.
 with lithium (ASSMANN), B., 244.
 with lithium or manganese, effect of silicon in (ASSMANN), B., 831.
 with magnesium (HALSTEAD and SMITH), A., 565; (BAKKEN and AMER. MAGNESIUM CORP.), (P.), B., 590.
 with magnesium and silicon, sand-cast (DANIELS), B., 494.
 with manganese, sand-cast (DANIELS), B., 280.
 with mercury, decomposition and reducing power of (HAHN and SCHLEIPEN), A., 695.
 action of, on *dl*-formylglycine and *dl*-formyl-leucine (FODOR and FRANKEL), A., 1234.
 with nickel, ternary and quaternary, constitution and age-hardening of (BINGHAM), B., 791.
 with silicon (PETIT), B., 58; (JEFFRIES, ARCHER, and ALUMINUM CO. OF AMERICA), (P.), B., 369; (GWYER and PHILLIPS; STOCKDALE and WILKINSON), B., 830; (GROGAN; OTANI B., 831; (PACZ and ALUMINUM CO. OF AMERICA), (P.), B., 884.
 castings of (ARCHER, EDWARDS, and ALUMINUM CO. OF AMERICA), (P.), B., 246*.
 treatment of (GWYER, PHILLIPS, and BRIT. ALUMINIUM CO.), (P.), B., 496*.
 with titanium (MANCHOT and LEBER), A., 119.
 with zinc (TIEDEMANN), B., 160, 751.
 cutectoid transformation in (ISHIHARA), B., 672.
 improvement of (GOLDSCHMIDT A.-G.), (P.), B., 885.
 Aluminium compounds, in plants (STOKLASA), A., 547.
 Aluminium salts, manufacture of (LEDERER and STANCZAK), (P.), B., 980.
 influence of, on growth of sugar cane (McGEORGE), B., 169.
 Aluminium, arsenide, selenide, and telluride, action of, on alcohols and ethers (NATTA), A., 1023.
 bromide thiohydrate, electrical conductivity of, in benzene (JAKUBSOHN), A., 29.
 chloride, preparation of (LEA and HUMPHREY), (P.), B., 89.
 manufacture of (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 12; (BURGESS and BARNETT), (P.), B., 156; (PRITCHARD, HENDERSON, and GULF REFINING CO.), (P.), B., 273; (McAFEE and GULF REFINING CO.), (P.), B., 439; (DEARBORN and TEXAS CO.), (P.), B., 980.
 recovery of, from oil residues (McAFEE and GULF REFINING CO.), (P.), B., 231.
 removal of residues of, from oil stills (McAFEE and GULF REFINING CO.), (P.), B., 431.
 fluorides (TOSTERUD), A., 255.
 potassium fluoride (WEINLAND, LANG, and FIKENTSCHER), A., 136.
 hydroxide, structure of (BÖHM), A., 113.
 adsorption by (TESTONI), A., 789.
 adsorption of ions by, and its mixtures with barium sulphate (MEHROTRA and DHAR), A., 1091.
 gels (WILLSTÄTTER, KRAUT, and ERBACHER), A., 34, 35.
 thixotropic behaviour of (FREUNDLICH and BROUMSHAW), A., 1098.
 sols, viscosity and hydrogen-ion concentration of (YOE and FREYER), A., 1203.
 use of, in water purification (JOHNSTON and DOWNEY), B., 723.
 nitrate, purification of (MEJDELL, RAVNER, and NORSK HYDRO-ELEKTRISK KVAELSTOFKATIESELSKAB), (P.), B., 439.
 oxide (*alumina*), preparation of (JACOBSSON), (P.), B., 89.
 preparation of, almost free from iron (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 51.
 and its salts, preparation of (I. G. FARBERIND.), (P.), B., 789.
 pure, electrothermic production of (HAGLUND), B., 191.
 manufacture of (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 12; (JACOBSSON), (P.), B., 192* (RIEDEL), (P.), B., 406; (PATROUILLEAU and Soc. ANON. ALUMINE & DÉRIVÉS), (P.), 630.
 production of, from alunite (YAMAZAKI and FURUKAWA), B., 874.
 from leucite (S.I.P. Soc. ITAL. POTASSA), (P.), B., 487; (GIORDANI and POMILIO), (P.), B., 538.
 production of alkali, calcium silicate, and (COWLES and ELECTRIC SMELTING & ALUMINIUM CO.), (P.), B., 743.
 fibrous, optical properties of (KRAUSZE), A., 352.
 adsorption of gases by (PERRY), A., 19; (MUNRO and JOHNSTON), A., 347.
 adsorption of ammonia by (NIKITIN), A., 1002.

- Aluminium oxide, effect of heat on (BLANC), A., 1205.
 hydrates of (GUICHARD), A., 475.
 hydrated, preparation of (WILLIAMS), (P.), B., 52.
 effect of temperature of formation on physical properties of (YOE), A., 24.
 properties of, as catalyst (HOWARD), A., 918.
 equilibria in the system lime, silica, and (GRÜN), B., 323.
 latent energy of single components of the system silica, lime, and (GRÜN), B., 324.
 equilibria of manganese oxide, silica, and, in furnace slags (GLASER), (P.), B., 753.
 equilibrium of silica, calcium oxide, sodium oxide, and (EITEL), B., 742.
 catalysis by (BOSWELL and DILWORTH), A., 134.
 reduction of (METAL RESEARCH CORP.), (P.), B., 711*.
 electrothermal reduction of (FRARY and ALUMINUM CO. OF AMERICA), (P.), B., 833.
 fusion of, with sodium carbonate (FELD), B., 273.
 analysis of materials rich in (SCHÜRMANN and BÖHM), B., 90.
 selenocyanates, ammonia compounds of (BERGSTROM), A., 1114.
 silicates, mineral, crystal structure of (ROSDAUB and MARK), A., 889.
 decomposition of (HEPKE), (P.), B., 666.
 sulphate, preparation of, from bauxite (SPICER and DORR CO.), (P.), B., 936.
 manufacture of (MOLDENKE and SCHUMACHER), (P.), B., 127* ; (SPENCE, LLEWELLYN, and SPENCE & SONS), (P.), B., 320 ; (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 360 ; (PATROUILLEAU and SOC. ANON. ALUMINE & DÉRIVÉS), (P.), B., 630 ; (DORR CO. and SPICER), (P.), B., 665.
 equilibria of, with copper sulphate and water and with ferrous sulphate and water (OCCLESIAHAW), A., 26.
 equilibrium of nickel sulphate, water, and (CAVEN and MITCHELL), A., 26.
 equilibrium of silver sulphate, water, and (CAVEN and MITCHELL), A., 26.
 hydrolysis of (PELLING), B., 125.
 potassium sulphate (*alum*) as catalyst for production of ether from alcohol (JATKAR and WATSON), B., 565.
 Chloroaluminates (GERMANN and TIMPANY ; GERMANN and BIROSEL), A., 35.
 Fluoroaluminates, complex (WEINLAND, LANG, and FIKENT-SCHER), A., 136.
 Aluminium organic compounds :—
 Aluminium ethyls, and their derivatives (GRIGNARD and JENKINS), A., 55.
 Aluminium detection, determination, and separation :—
 detection of (ESTILL and NUGENT), A., 263.
 detection of, with cobalt aluminate (OTTO), A., 815.
 detection of, in non-ferrous alloys (LUNDELL and KNOWLES), B., 195.
 determination of, as hydroxide (JANDER and RUPERTI), A., 704.
 determination of oxide in (WITHEY and MILLAR), B., 546.
 separation of magnesium and (LASSIEUR), A., 376.
 separation of iron and, from zirconium (LESSING), A., 263.
 Aluminium-bronze, transformations of (BOULDOIRÈS), B., 983.
 deoxidation of (HARVEY and AMER. MAGNESIUM CORP.), (P.), B., 133.
 Aluminium electrodes. See under Electrodes.
 "Aluminon," reactions of, with hydroxides of beryllium, rare earths, zirconium, and thorium (MIDDLETON), A., 930.
 Almino-silicates, deformation study on (LU), B., 240.
 treatment of, for use in water softening (H. & H. REINBOLD), (P.), B., 254.
 Almino-silicate minerals (DITTLER), A., 816.
 Alunite, identity of newtonite with (FOSHAI), A., 709.
 treatment of (TILLEY), (P.), B., 743.
 Amalgams. See Mercury alloys.
 Amber, artificial ageing of (SAXL), (P.), B., 597.
Ameiurus, effect of asphyxia and isletectomy on blood-sugar of (SMIPSON), A., 974.
 Amides, catalytic decomposition of (MAILHE), A., 54.
 action of nitrous acid on (PLUMMER), A., 156.
 acid sulphates of, from nitriles (TRUSLER and ROESSLER & HASSLACHER CHEMICAL CO.), (P.), B., 608.
 acid, chemical constitution and pungency of (JONES and PYMAN), A., 60.
 substituted (NICHOLAS and ERICKSON), A., 1031.
 Amidines, tautomerism of (FORSYTH and PYMAN), A., 1156.
 of the holocaine type (HILL and RABINOWITZ), A., 516.
 N-alkylated (SEN and RAY), A., 606.
 Amines, production of (SCHMIDT), (P.), B., 646*.
 modification of Gabriel synthesis of (ING and MANSKE), A., 1132.
 and their substitution products, manufacture of (SCHMIDT), (P.), B., 216.
 infra-red absorption spectra of (BELL), A., 222, 453 ; (SALANT), A., 453.
 ultra-violet absorption spectra of (LEY and VOLBERT), A., 1080.
 resolution of, by means of *d*-tartaric acid (BILLON), A., 405.
 equilibria of acids and (KREMANN, WEBER, and ZECHNER), A., 393.
 effect of oxygen on basicity of (STEWART and ASTON), A., 814.
 benzylation of (PEACOCK), A., 691.
 ethylation of (CADE and CARBIDE & CARBON CHEMICALS CORP.), (P.), B., 355.
 oxidation of (GOLDSCHMIDT and BEUSCHEL), A., 607.
 action of, on quaternary ammonium halides (v. BRAUN, KÜHN, and GOLL), A., 1259.
 reactions of sugars with (v. EULER and JOSEPHSON), A., 714 ; (v. EULER, BRUNIUS, and JOSEPHSON), A., 822.
 aliphatic primary, preparation of (MACUREVITSCH), A., 824.
 aromatic, catalytic reduction of, with platinum oxide-platinum black (HIERS and ADAMS), A., 402.
 sulphonation of (LEITCH & Co. and EVEREST), (P.), B., 974.
 molecular compounds of (WEISSENBERGER, SCHUSTER, and LIEBLACHER), A., 465.
 N-alkylated, preparation of (RIEDEL A.-G.), (P.), B., 771.
 primary, preparation of (FINOW-GES. and MÜLLER), (P.), B., 149.
 catalytic preparation of (I. G. FARBEIND.), (P.), B., 870.
 determination of, gasometrically (GRIGORJEV), A., 1049.
 primary and secondary, manufacture of (MERCK and KRAUSS), (P.), B., 964.
 primary, preparation of (CAROTHERS and JONES), A., 161.
 condensations of phenylacetylene with (KRASYSKI and KIPRIANOV), A., 158.
 cyclic, colour reaction for (SANCHEZ), A., 720.
 hydroaromatic, reactions of (KÖTZ and MERKEL), A., 721.
 secondary, action of formaldehyde and, on acids (MANNICH and STEIN), A., 165.
 aromatic-aliphatic, N-methylsulphites of (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 141.
 tertiary, preparation of (SOMMELET), A., 946.
 determination of, by potentiometric diazotisation (MÜLLER and DACHSELT), A., 314.
 Amine oxides, optically active (MEISENHEIMER, GLAWE, GREESEKE, SCHORNINO, and VIEWEG), A., 1240.
 Amino-acid, $C_6H_{11}O_2NS$, and its derivatives, from yeast (ODAKE), A., 203.
 Amino-acids, preparation of (ANZIEGIN, GULEWITSCH, and NORDHEIM), A., 1111.
 physical properties of (ABDERHALDEN and HAAS), A., 959, 960.
 ultra-violet extinction coefficients of (MARCHLEWSKI and NOWOTNÓWNA), A., 222.
 photo-oxidation of (HARRIS), A., 635.
 decomposition of, by heat (BETTZIECHE and EHRLICH), A., 154.
 solubilities of (SANO), A., 345.
 decarboxylation of (ABDERHALDEN and GEBELEIN), A., 623.
 dehydrogenation of (BERGMANN and STERN), A., 743.
 oxidation of (GOLDSCHMIDT and BEUSCHEL), A., 607.
 action of Grignard reagents on (BETTZIECHE and EHRLICH), A., 154, 155, 1234.
 compounds of aldehydes with (BERGMANN and ZERVAS), A., 603.
 complex compounds of chromium with (SARKAR), A., 1235.
 action of hypochlorites on (WRIGHT), A., 966.
 compounds of piperazines with (ABDERHALDEN and KOHL-EGGER), A., 1047.
 reaction of dextrose with (v. EULER, BRUNIUS, and JOSEPHSON), A., 822.
 reactions of sugars with (MAURER), A., 602 ; (NEUBERG and KOBEL), A., 1061.
 butyl esters (MORGAN), A., 276.
 anhydrides of (GRÄNACHER, SCHELLING, and SCHLATTER), A., 78 ; (GRÄNACHER), A., 79 ; (SHIBATA), A., 505.

- Amino-acids**, absorption spectra of (SHIBATA and ASAHINA), A., 659.
 fate of, in blood (SCHLOSSMANN), A., 1171.
 katabolism of (CORLEY), A., 1171.
 effect of removal of liver on deamination of (BOLLMAN, MANN, and MAGATH), A., 1272.
 metabolism of. See Metabolism.
 aliphatic, double compounds of alkali phosphates and (BOEHRINGER & SOEHNE), (P.), B., 464.
 aromatic, action of α -oxides on esters of (KIPRIJANOV), A., 950.
 adsorbed, synthesis of substances containing (FODOR and FRANKEL), A., 1234.
 benzoyleated, in the animal organism (GRIFFITH and CAPPEL), A., 429; (GRIFFITH), A., 972.
 naturally occurring (KARRER and EHRENSTEIN), A., 603.
 determination of the proportion of double ions in (EBERT), A., 906.
 determination of, by "formol" titration (JODIDI), A., 535; (NORTHROP), A., 1184.
 separation of, from hydrolysis products of proteins (FOSTER and SCHMIDT), A., 802.
 α -Amino-acids, Strecker's synthesis of (SANNIÉ), A., 276, 504.
 anhydrides of *N*-carboxylic derivatives of (SIGMUND and WESSELY), A., 960.
 β -Amino-acids, synthesis of (MANNICH and STEIN), A., 165.
Amino-alcohols, preparation of (PUTOCHIN and LISSIZIN), A., 602.
 tertiary, elimination of amino-groups from (McKENZIE, ROGER, and WILLIS), A., 610.
 ω -Aminoalkyl compounds, hydrocyclic, preparation of (RUPE), (P.), B., 27.
Aminoaryl disulphides, phototropic (CHILD and SMILES), A., 1243.
Amino-compounds, interaction of carbohydrates and (HYND), A., 501.
 reactions of $\beta\beta'$ -dichloroethyl sulphide with (LAWSON and REID), A., 80.
 action of nitrous acid on (PLIMMER), A., 156.
 acetylation of, in the body (MUENZEN, CERECEDO, and SHERWIN), A., 539.
 aromatic, Tesla-luminescence spectra of (McVICKER, MARSH, and STEWART), A., 222.
 action of sulphites on (BUCHERER and BARSCH), A., 162.
Aminohydroxy-acids (BETZIECHE), A., 155.
Aminohydroxy-compounds, biuret reaction with (TOMITA), A., 1129; (TOMITA and FUKAGAWA), A., 1235.
 aromatic, electrolytic production of (POTTS and CHEM. FABR. GRÜNAU, LANDSHOFF & MEYER), (P.), B., 736.
Amino-ketones, preparation of (MANNICH), (P.), B., 514, 611.
Amino-sulphones from aromatic *o*-hydroxycarboxysulphonic acids (BRIT. DYESTUFFS CORP. and SAUNDERS), (P.), B., 233.
Ammonia, structure of (MARK and POHLAND), A., 227.
 formation of, from nitrogen and hydrogen in presence of ozone (GRUBB), A., 588, 1011.
 synthesis of (HARTER and OTTO), (P.), B., 12, 192*; (CLAUDE and LAZOTE), (P.), B., 488*; (SYNTHETIC AMMONIA & NITRATES and BRAMWELL; HARTE), (P.), B., 788; (SYNTHETIC AMMONIA & NITRATES and HUMPHREY), (P.), B., 821; (SYNTHETIC AMMONIA & NITRATES and SLADE), (P.), B., 822; (BLACKBURN and THOMAS), (P.), B., 978; (UHDE; MONTECATINI, SOC. GEN. PER L'IND. MIN. ED AGRIO, and FAUSER; CICALI), (P.), B., 979.
 at very high pressures (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 236.
 in low-voltage arcs (OLSON), A., 658.
 from coke-oven gas (CLAUDE), B., 404; (DODGE), B., 741.
 preparation of gas mixture for (EDWIN), (P.), B., 321.
 preparation of nitrogen-hydrogen mixtures for (HUMPHREY and SYNTHETIC AMMONIA & NITRATES), (P.), B., 89; (CHEM. FABR. KALK), (P.), B., 236.
 thermionic properties of mixtures used as catalysts in (KUNSMAN), A., 685.
 purification of gases for (CLAUDE and LAZOTE), (P.), B., 707.
 removal of carbon monoxide from gases for (DELY and ATMOSPHERIC NITROGEN CORP.), (P.), B., 823*.
 removal of oxygen from mixed gases in (ALMQUIST and CRITTENDEN), B., 820.
 apparatus for (SYNTHETIC AMMONIA & NITRATES and BRAMWELL), (P.), B., 12, 405; (NORSK HYDRO-ELEKTRISK KVAELSTOFAKTIESELSKAB), (P.), B., 51; (CICALI), (P.), B., 405.
Ammonia, catalysts for (CARRARA), (P.), B., 155; (CEDERBERG and NORSK HYDRO-ELEKTRISK KVAELSTOFAKTIESELSKAB), (P.), B., 236; (CEDERBERG, FJELLANGER, GRUNER, and NORSK HYDRO-ELEKTRISK KVAELSTOFAKTIESELSKAB), (P.), B., 666*.
 manufacture of (DEGUIDE), (P.), B., 155; (DUGOUJON), (P.), B., 236; (CANADIAN PRESS-AIR, LTD., JOHNSTON, and POPE), (P.), B., 666.
 from gases containing hydrogen cyanide (HALVORSEN and NORSK HYDRO-ELEKTRISK KVAELSTOFAKTIESELSKAB), (P.), B., 440*.
 slaking of lime in (DEMPSTER and HOLTON), (P.), B., 52.
 and its compounds, manufacture of, from calcium cyanamide (FABR. NAT. PROD. CHIM. & D'EXPLOSIFS), (P.), B., 744.
 production of sulphur, thiosulphates, and (FABR. CHEM. PROD. HEFTI and SCHILT), (P.), B., 322.
 distillation of (UNGER), (P.), B., 707.
 removal of, from gases (MASE, and MINE SAFETY APPLIANCES Co.), (P.), B., 128.
 liquor, crude, distillation of (STILL), (P.), B., 438.
 purification of (WEINDEL and ZECHE STINNES), (P.), B., 238*.
 working-up of (RASCHIG), (P.), B., 236.
 elimination and recovery of phenols from (CRAWFORD), B., 348.
 determination of phenols in (ULRICH and KATHER), B., 306.
 recovery of, from ammoniacal liquor (BAMAG-MEQUIN A.-G.), (P.), B., 538.
 from coal gas (JACKMAN), B., 809.
 from vinasses (GUIGNARD), (P.), B., 562.
 infra-red absorption spectrum of (DENNISON), A., 222.
 ultra-violet band spectrum of (KWEI), A., 1192.
 optical anisotropy of (RAMANATHAN and SRINIVASAN), A., 336.
 electric moment of (ZAHN), A., 565.
 vapour pressure of aqueous solutions of (WILSON), A., 1000.
 gas, viscosity of (EDWARDS and WORSWICK), A., 118.
 liquid, synthetic manufacture of (PATART), (P.), B., 52.
 thermodynamics of electrolytes in (WEBB), A., 1102.
 solutions of non-metallic elements in (BERGSTROM), A., 1113.
 molecular weight determinations in (REIHLEN and NESTLE), A., 783.
 adsorption of, by wood charcoal (HENGLEIN and GRZENKOVSKI), B., 143.
 by glass walls (CRESPI and MOLES), A., 1002.
 by metallic oxides (NIKITIN), A., 1002.
 from coke-oven gas (FOKIN), B., 581.
 adsorption and desorption of, in coke (SHERWOOD and KILGORE), B., 706.
 purification of air containing (PERROTT and YARLICK), (P.), B., 30.
 decomposition of, by ultra-violet radiations (KUHN), A., 920.
 influence of water vapour and hydrogen chloride on velocity of decomposition of (SCHMIDT), B., 87; (ELLIS and ELLIS-FOSTER Co.), (P.), B., 51.
 oxidation of (PARTINGTON), A., 487, 696.
 utilisation of energy liberated during (BESSENFELDER), (P.), B., 320.
 catalytic oxidation of (MALIAREVSKI and MALIAREVSKAJA), B., 50; (ANDRUSSOV), B., 318; (I. G. FARBENIND.), (P.), B., 915.
 mechanism of (UCHIDA), A., 1214.
 to nitrite in presence of copper (MÜLLER), A., 362.
 catalytic oxidation of hydrocyanic acid and of (ANDRUSSOV), A., 582.
 catalysis by silver ammonia ions of the oxidation of, by persulphates (YOST), A., 365.
 combustion of, with oxygen (SIEBERT and UNGER), (P.), B., 156.
 explosion of mixtures of hydrogen and, with air or oxygen (JORISSEN and ONGKIEHONG), A., 359.
 action of, on phosphorus chlorides (PERPÉROT), A., 137.
 action of radon on mixtures of carbon oxides with (BAILEY), A., 254.
 additive compounds of ammonium perchlorate and (MAZZETTI and DE CARLI), A., 811.
 compounds of, with metallic sulphates (EPHRAIM), A., 809.
 corrosive action of water containing (TILGNER), B., 143.
 content of soil, relation of, to total nitrogen, nitrates, and soil reaction (HARPER), B., 335.

- Ammonia**, formation and elimination of, in the body (BLISS), A., 428; (BENEDICT and NASH), A., 1053.
 in blood (PARNAS and KLISIECKI), A., 536, 855; (ALDERSBERG and TAUBENHAUS), A., 855; (KLISIECKI), A., 968.
 autolytic formation of, in tissues (POPOVICIU), A., 640; (GYÖRGY and RÖTHLER), A., 864.
 origin of, in urine (RABINOVITCH), A., 1053.
 effect of thorium-X on formation of, in urine (MAUBERT), A., 759.
 determination of, colorimetrically (BERNOULLI), A., 1116.
 determination of, with Nessler's reagent (DEFAY), A., 1116.
 determination of urea and, with permutite (POHOREOKA-LELESZ), A., 764.
 determination of, in ammoniacal and industrial liquors (JUNGBLUT), B., 319.
 determination of, in fertilisers (CHASTELLAIN), B., 505.
 determination of, in fertilisers by formaldehyde method (SELKE), B., 250.
 influence of sugars on determination of, in grape must (VENTRE and BOUFFARD), B., 417.
Ammonium, physical constants of (BALANDIN), A., 29, 477.
 sodium ferrocyanide reaction for (GASPAR Y ARNAL), A., 591.
Ammonium compounds, quaternary, valency of nitrogen in (HAGER and MARVEL), A., 1232.
 effect of, on the nervous system (HUNT), A., 1173.
Ammonium ions, configuration of (MILLS and WARREN), A., 178.
Ammonium radicals, free (WEITZ and FISOHER), A., 527.
 quaternary, oxidation potentials of (FORBES and NORTON), A., 1105.
Ammonium salts, existence of, in blood (FONTÈS), A., 968.
Ammonium azide, decomposition of, in benzene and *p*-xylene (BERTHO), A., 508.
 carbonates (BONNIER), A., 370.
 carbonate and hydrogen carbonate, stabilisation of (A. & L. WELTER, and WEINDEL), (P.), B., 487.
 hydrogen carbonate, stable (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 155.
 perchlorate, additive compounds of ammonia and (MAZZETTI and DE CARLI), A., 811.
 chloride, crystalline, production of (I. G. FARBENIND.), (P.), B., 876.
 manufacture of mixtures of ammonium sulphate and (DANNEEL), (P.), B., 139.
 manufacture of hexamethylenetetramine and (CARTER and HARPER & BROS.), (P.), B., 217, 514*.
 equilibrium of ammonium nitrate and (BOWEN), A., 797.
 manufacture of sodium carbonate and (WACHÉ), (P.), B., 237.
 manufacture of sodium bicarbonate and (GES. F. KOHLEN-TECHNIK), (P.), B., 583.
 manufacture of sodium sulphate and (WACHÉ), (P.), B., 127, 237.
 and nitrate, apparatus for containing hot solutions of (I. G. FARBENIND.), (P.), B., 876.
 equilibria of mercuric and potassium chlorides, water, and (OSAKA and ANDO), A., 26.
 vapour, action of, on metals (HOFMANN and HARTMANN), A., 37.
 condensation of formaldehyde, acetone, and (MANNICH and RITSERT), A., 504.
 chromate and sulphate, equilibria of, with potassium chromate and sulphate (ISHIKAWA), A., 1102.
 halides, thermal dissociation of, in quantitative analysis (MOSER and MARIAN), A., 814.
 quaternary, action of amines on (v. BRAUN, KÜHN, and GOLL), A., 1259.
 perhalides, quaternary (READE), A., 1232.
 nitrate, safety in manufacture of (KERSHAW), B., 220.
 properties and equilibria of (BOWEN), A., 797.
 heat of dilution of (LERNER-STEINBERG), A., 910.
 heats of solution and solubility of, at the transition point (MONDAIN-MONVAL), A., 238.
 equilibrium of ammonium hydrogen sulphate, water, and (WÖHLER and SCHÄFFER), A., 256.
 equilibrium of potassium nitrate, water, and (ANDO), A., 26.
 mixtures of sodium nitrate and, for explosives (DEHN), (P.), B., 221.
 nitrate and sulphate, equilibria of, with water and potassium nitrate and sulphate (OSAKA and INOUE), A., 126.
 nitrite, decomposition of solutions of, by light (HOLMES), A., 920.
Ammonium phosphates, manufacture of (I. G. FARBENIND.), (P.) B., 821.
 double phosphites and pyrophosphates (ROSENHEIM, FROMMER, GLÄSER, and HÄNDLER), A., 696.
 selenite (WENDEHORST), A., 700.
 sulphate, production of large crystals of (HAILSTONE), B., 663.
 from sodium bisulphate and ammonia (MOLITOR), B., 664.
 manufacture and neutralisation of (BATEMAN), B., 404.
 saturator for manufacture of (SOC. DE FOURS À COKE ET D'ENTREPRISES IND.), (P.), B., 321.
 manufacture of mixtures of ammonium chloride and (DANNEEL), (P.), B., 139.
 mechanical condition of (CUMMINGS), B., 11.
 caking of (GREENFIELD), B., 359.
 continuous production of fatty acids, glycerin, and (GRAUBNER), (P.), B., 332.
 apparatus for drying and neutralising (SMITH), (P.), B., 915.
 recovery of, from coal gas (MARQUARD), (P.), B., 699.
 commercial, neutralisation of (THAU), B., 946; (COKE & GAS OVENS and PEARSON), (P.), B., 1014.
 equilibrium of ammonium nitrate and (BOWEN), A., 797.
 double sulphates with (ROUYER), A., 923.
 determination of, by the stearate method (ATKINSON), B., 358.
 determination of acidity of (LOWE), B., 358, 629; (SMITH), B., 358.
 hydrogen sulphate, equilibrium of ammonium nitrate, water, and (WÖHLER and SCHÄFFER), A., 256.
 cerous sulphates (ZAMBONINI and RESTAINO), A., 696.
 sodium sulphate, decomposition of (WACHÉ), (P.), B., 321.
 persulphate, electrolytic formation of (ESSIN), A., 804.
 preparation of (FICHTER and HUMPERT), A., 699.
Ammonium stibamine (BRAHMACHARI and DAS), A., 541.
Amaba proteus, action of chlorides on protoplasm of (CHAMBERS and REZNIKOV), A., 759; (REZNIKOV), A., 1173.
Amorphous state, non-existence of (v. WEIMARN and IIAGIWARA), A., 338.
Amorphous substances, entropy of (SIMON and LANCE), A., 1000.
 coefficient of dilatation of (SAMSOEN), A., 570.
Amphiboles, chemical composition of (GOSSNER), A., 595.
 iron-alkali (MOROZEWICZ), A., 266.
Ampholytes, determination of double ions in (EBERT), A., 906.
Amygdalin, action of emulsin on (ROSENTHALER), A., 202.
Amyl alcohol, viscosity of, at low temperatures (MIZUSHIMA), A., 1082.
 unsuitable for milk testing by Gerber's method (GOY and JANISCH), B., 252.
 naphthylurethane from (BICKEL and FRENCH), A., 517.
n-Amyl alcohol, ϵ -amino-, and its chloroplatinate (PUTOCHIN and LISSIZIN), A., 602.
iso-Amyl alcohol, action of magnesium isobutoxide on (TERENTIEV and BOLOTINE), A., 268.
sec.-Amyl ether (SENDERENS), A., 46.
dl-sec.-Amylacetyletacetone, and its copper salt (MORGAN), A., 183.
iso-Amylamine, α -naphthylcarbamide from (FRENCH and WIRTEL), A., 830.
p-N-iso-Amylaminobenzoic acid, β -diethylaminoethyl ester (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 107.
1-Amyl- β -aminoethylpiperidine, ϵ -amino-, and its salts (v. BRAUN, GOLL, and ZOBEL), A., 739.
2-Amylamine-1:6:8-trinitronaphthalenes (VAN DER KAM), A., 1240.
2-Amylamine-1:2:3:4-tetrahydronaphthalene, ϵ -amino-, and its benzoyl derivative, and their salts (v. BRAUN, GOLL, and METZ), A., 1233.
n-Amylisoamylaniline (v. BRAUN and MURJAHN), A., 829.
Amylanilines, derivatives of (v. BRAUN and MURJAHN), A., 829.
Amylanilines, 2:4-dinitro- (VAN DER KAM), A., 1240.
9-isoAmylanthracene, 10-bromo-, *tetrabromide*, and 2:3:10-*tri*-bromo- (BARNETT and MATTHEWS), A., 1030.
Amylase, complement of (PRINGSHEIM and OTTO), A., 864; (PRINGSHEIM and WINTER), A., 1274.
 activation of, by spring-waters (LOEPER and MOUCROT), A., 201.
 system of neutral salts-amino-acids-peptose having an action similar to that of (HAEN and BERENTZEN), B., 603.
 of barley, hydrolysis of starch by (EADIE), A., 1174.
 malt, effect of hydrogen-ion concentration on the action of (CHRZASZCZ, BIDZINSKI, and KRAUSE), A., 93.
 in plants, thermostability of (BODNÁR and VILLÁNYI), A., 541.

- Amylase**, salivary inactivated, attempted reactivation of (SCHWARZ and GEWISS), A., 1274.
 of sugar beet, activation of, by ions (DOBY and HIBBARD), A., 1182.
 from germinated wheat and rye (TAYLOR, SPENCER, and HOUSE), B., 139.
 yeast (GOTTSCALK), A., 759.
 determination of, microchemically (ENGELHARDT and GERTSCHUK), A., 443.
 determination of, viscosimetrically (DAVISON), A., 328.
- Amylases**, specific action of (PRINGSHEIM, LEIBOWITZ, PEREWOSKY, and KUSENACK), A., 715.
- 5-isoAmylbenzaldehyde**, 2-hydroxy-, and its derivatives (HENRY and SHARP), A., 1162.
- l-Amyldecahydroquinoline**, ϵ -amino-, and its benzoyl derivative and chloroplatinate (v. BRAUN and ZOBEL), A., 1150.
- Amyl- $\beta\beta'$ -dicarbethoxydiethylamines** (McELVAIN), A., 1044.
- 3-sec.-Amyldipropionylmethane**, and its copper salt (MORGAN), A., 189.
- "Amylene hydride,"** true nature of (GELISSEN and HERMANS), A., 63.
- Amylobiose** (PRINGSHEIM and STEINGROEVER), A., 715.
- Amyloid** (PAVLICA), A., 196.
- Amyloses**, optical rotation and structure of (PRINGSHEIM and LEIBOWITZ), A., 275; (HUDSON, PRINGSHEIM, and LEIBOWITZ), A., 276.
- Amyloseoctadextrin**, and its hydrates (KLASON and SJÖBERG), A., 276.
- p-isoAmyloxybenzhydramine**, and its hydrochloride (TORRÈS Y GONZALÈS), A., 396, 609.
- p-isoAmyloxybenzophenone**, and its oxime (TORRÈS Y GONZALÈS), A., 396, 609.
- Amyloxymethyl α -chloro- γ -bromo- and $\alpha\gamma$ -dichloro-isopropyl ethers** (BLANCHARD), A., 1123.
- 2-isoAmyl- β -1-cyclopentylacetaldehyde** (WIELAND and MARTZ), A., 1249.
- p-isoAmylphenol**, 2,6-dinitro-, potassium salt (HENRY and SHARP), A., 1162.
- 1-isoAmylpyridinium iodide** (MAGIDSON and MENSCHIKOV), A., 844.
- Amylresorcinols** (DOHME, COX, and MILLER), A., 338.
- 4-sec.-Amylcydotelluripentane-3:5-dione dichloride** (MORGAN), A., 188.
- 4-sec.-Amylcydotelluropentane-3:5-dione** (MORGAN), A., 188.
- n-Amylthiazane**, and its dioxide and their hydrochlorides (LAWSON and REID), A., 80.
- Amyl α -undecynyl ketone** (GRIGNARD and PERRICHON), A., 382.
- isoAmylxanthidrol** (CONANT and SMALL), A., 158.
- isoAmylxanthyl perchlorate** (CONANT and SMALL), A., 158.
- α - and β -Amyrins**, and their esters (DISCHENDORFER and RENDI), A., 522.
- Amytal**. See Ethylisoamylbarbituric acid.
- Anemia** in rabbits fed on cow's and goat's milk (BROUWER), A., 425.
 from injection of phenylhydrazine, carbon-nitrogen ratio in urine in (KANAMORI), A., 1169.
 effect of iron salts in (WILLIAMSON and ETS), A., 196; (MITCHELL and SCHMIDT), A., 1269.
 pernicious (MONTGOMERY; RIOCH and CAMERON), A., 1269.
 chlorine content of blood in (HADEN), A., 859.
- Anesthesia**, effects of chemicals added to ether in (BOURNE), A., 1173.
 effect of, on phosphorus metabolism (BOLLIGER), A., 1172.
 ether, cholesterol in blood in (MAHLER), A., 1172.
- Anæsthesin**. See Benzoic acid, *p*-amino-, ethyl ester.
- Anæsthetics** (WIELAND and BOEHRINGER SOHN), (P.), B., 28*; (ADAMS, DREGER, VOLWILER, and ABBOTT LABORATORIES), (P.), B., 851.
 antiseptic (THAYER and ABBOTT LABORATORIES), (P.), B., 853*.
 gaseous (BROWN and HENDERSON), B., 645.
 local, basicity of (VLIET and ADAMS), A., 1037.
 action of, on the heart and intestines (LASCH), A., 201.
 surface (FARBW. vorm. MEISTER, LUCIUS, & BRÜNING), (P.), B., 107.
- Anagryis fatida**, constituents of the tegument of seeds of (CONDORELLI), A., 210.
- Analgesics** (LILLY and LILLY & Co.; HOOPER and METZ LABORATORIES), (P.), B., 172; (SCHULEMANN, MEISENBURG, and WINTHROP CHEM. Co.), (P.), B., 931.
 action of (HIRSCHFELD and SERLES), A., 1274.
- Analysis** by means of fluorescence and phosphorescence (ROBL), A., 701.
 with the dropping mercury cathode (HEYROVSKÝ), A., 590.
 of metals of Group III (LONGINESCU and CHABORSKI), A., 592.
 capillary, examination of resins by (STOCK), B., 679.
 centrifugo-volumetric (LE GUYON), A., 927.
 colorimetric (DEFAY), A., 1115.
 combustion, history of the development of (WEYGAND), A., 314.
 conductometric (JANDER and PFUNDT; HIRSCH), A., 700.
 dispersoid (v. HAIN), B., 143.
 electrolytic, errors in (BOEHM), A., 374.
 use of electrodes of V2A-steel in (SCHLEICHER and TOUSSAINT), (P.), B., 675.
 electrometric, use of alcohol-water mixtures in (ATHANASIU), A., 376.
 with permanganate, electrodes for (LANG), A., 1116.
 precipitation (ATHANASIU), A., 929.
 electro-volumetric (ZANKO), A., 910.
 new end-point in (FOULK and BAWDEN), A., 927.
 elementary volumetric (HACKFILL and D'HUART), A., 374.
 gravimetric, use of porcelain filtering crucibles in (MOSER and MAXYMOWICZ), A., 589.
 microchemical (ROSENTHALER), A., 186; (HENRICH), A., 589; (HARTUNG), A., 593; (LUNDE), A., 1163.
 application of, to control work in pharmaceutical manufacturing (FIGDOR), B., 333.
 radiometric (EHRENBERG), A., 929.
 micro-organic (FLASCHENTRÄGER; FUNK and KON), A., 853.
 micro-volumetric, apparatus for (SCHILOV), A., 706.
 physico-chemical, by seeded precipitation (DUBOUX), B., 966.
 qualitative, of cations by the spot method (TANANAEV), A., 927.
 macromicro- (VAN ECK), A., 926.
 microchemical (DENIGÈS), A., 489.
 organic, use of 3:5-dinitrobenzoyl chloride and anthraquinone- β -carboxyl chloride in (REICHSTEIN), A., 1225.
 quantitative, by means of X-ray spectra (GÜNTHER and WILCKE), A., 663.
 adsorption of colloids in (EIGENBERGER), A., 701.
 spectrum. See Spectrum analysis.
 volumetric, in Wood light (MELLET and BISCHOFF), A., 813.
 use of liquid amalgams in (SOMEYA), A., 702, 705, 1116, 1117.
- Anaphylaxis** in dogs, effect of, on sugar and lactic acid in blood (McCULLOUGH and O'NEILL), A., 192.
- Anatase**, crystal structure of (VEGARD), A., 663.
- Andalusite**, specific heat of, at low temperatures (SIMON and ZEIDLER), A., 1103.
- Andesine** from Trifail, Yugoslavia (HIMMELBAUER), A., 266.
- Andropogon citratus**, essential oil of, from Sukhum, Caucasia (KRASILEVSKI), B., 340.
- Anethole**, oxidation of (HORIUCHI and UYEDA), A., 292.
- Anethum**, apiole from (DELÉPINE and LONGUET), A., 1036.
- Angelite**, structure of (JAMES and WOOD), A., 13.
- Anhydrides**, acid, velocity of hydrolysis of diacyl peroxides and (BÖSEKEN and GELISSEN), A., 166.
 velocity of hydrolysis of, in presence of electrolytes and non-electrolytes (SZABÓ), A., 1010.
- Anhydrite**, crystal structure of (DICKSON and BINKS), A., 781; (WASASTJERNA), A., 1195.
 plaster from (BUDNIKOV and LEWIN), (P.), B., 543.
- Anhydro-*p*-amino- α -hydroxybenzyl alcohol** (SHIMO), A., 1243.
- Anhydro-2- $\beta\beta\beta$ -trichloro- α -hydroxyethoxy-1- $\beta\beta\beta$ -trichloro- α -hydroxyethylbenzene** (CHATTAWAY), A., 1242.
- Anhydrocotarnine-2:4-diaminotoluene**, and its diacetyl derivative (ROBINSON and WEST), A., 1045.
- Anhydrocotarnine-2-nitro-4-amino-3-methoxytoluene**, and its acetyl derivative (ROBINSON and SHINODA), A., 1048.
- Anhydrocotarnine-2:6-dinitrohomoveratrole** (GRAESSER-THOMAS, GULLAND, and ROBINSON), A., 1035.
- Anhydrocotarnine-2:4-dinitro-3-methoxytoluene**, and its hydrochloride (ROBINSON and WEST), A., 1045.
- Anhydrodihydroisocorycavidine** (v. BRUCHHAUSEN), A., 184.
- Anhydrodihydrocryptone oxide**, and its hydrochloride (HAWORTH and PERKIN), A., 964.
- Anhydrodihydroprotopine**, and its oxide and hydrochloride (HAWORTH and PERKIN), A., 965.
- Anhydrodimethylisatin- α -dimethylantranilide** (HELLER and LAUTH), A., 740.
- Anhydrodrastinine-2:4:6-trinitrotoluene**, and its hydrochloride (ROBINSON and WEST), A., 1045.

- Anhydro-2-hydroxy-5-methyl-3-hydroxymercuri-azobenzene-carboxylic acids (WHITMORE, HANSON, and LEUCK), A., 629.
- Anhydro-2-hydroxy-5-methyl-3-hydroxymercuri-azobenzene-4'-sulphonic acid, sodium salt (WHITMORE, HANSON, and LEUCK), A., 629.
- Anhydrolaudaline-2-amino-4-acetamido-3-methoxytoluene (ROBINSON and SHINODA), A., 1048.
- Anhydrolaudaline-2,4-diamino-3-methoxytoluene, and its dihydrochloride (ROBINSON and SHINODA), A., 1048.
- Anhydrolaudaline-2-nitro-4-amino-3-methoxytoluene, and its derivatives (ROBINSON and SHINODA), A., 1048.
- Anhydrolaudaline-2,4-dinitro-3-methoxytoluene, and its hydrochloride (ROBINSON and SHINODA), A., 1048.
- Anhydromethylenecitric acid, salts (VANINO and GUYOT), A., 500. sodium salt. See "Citarin."
- Anhydro- α -methylglucoside (HELPERICH, KLEIN, and SCHÄFER), A., 275.
- Anhydro-5-nitro-2- $\beta\beta\beta$ -trichloro- α -hydroxyethoxy-1- $\beta\beta\beta$ -trichloro- α -hydroxyethylbenzene (CHATTAWAY), A., 1242.
- Anhydrosulphobenzoylactic acid, ethyl ester, and its metallic salts and derivatives (FEIST, PAUSCHARDT, and DIBBERN), A., 74.
- Anhydrotetrahomomethylberberine oxide, and its hydrochloride (HAWORTH and PERKIN), A., 417.
- Anhydrotetrahydromethyleorycavidine, and its salts and derivatives (v. BRUCHHAUSEN), A., 184.
- Anhydrotetrakis- α -aminobenzaldehyde, and its derivatives (SEIDEL), A., 1141.
- Anhydrotis- α -aminobenzaldehyde, and its derivatives (SEIDEL), A., 1140.
- Aniline, scattering of light by (KITCHING), A., 15.
- rates of diffusion of, in various solvents (MUCHIN and FAERMANN), A., 786.
- equilibrium of lactic acid, water, and (ANGELESCU), A., 357.
- action of chlorine on (BROWN and CUMMING), B., 909.
- catalytic action of Japanese acid earth on methyl alcohol and (INOUE), A., 1132.
- action of, on dextrose, in acetic acid solution (CAMERON), A., 1026, 1228.
- acetylation of (GASOPOULOS), A., 1131.
- poisoning. See under Poisoning.
- salts of, with alkyl hydrogen sulphates (POPELIER), A., 1123.
- n*-butyl-, cyclohexyl-, and toluene- ω -sulphonates (GILMAN and MORRIS), A., 1132.
- o*-tolylsulphamate (POPELIER), A., 1123.
- Aniline, *m*-chloro-, action of mercuric acetate on (VECCHIOTTI), A., 852.
- 2:4-dichloro-, 6-mercuriacetate, and its derivatives (VECCHIOTTI and CARANI), A., 747.
- 4-chloro-2:6-dibromo-, melting point of (GILBERT), A., 1030.
- 2-chloro-5-iodo- (KRAAY), A., 1034.
- o*- and *p*-iodo-, mercuri-salts and derivatives of (VECCHIOTTI and MICETTI), A., 1163.
- o*-nitro-, laboratory preparation of (SAKELLARIOS and JATRIDES), A., 59.
- p*-nitro-, diazotised, manufacture of stable preparations of (I. G. FARBERIND.), (P.), B., 781.
- 2:4-dithiocyno- (KAUFMANN and OEHNING), A., 392.
- Anilines, monochloro-, action of sulphur on (HODGSON), A., 511.
- nitro-, solubilities of (COLLETT and JOHNSON), A., 237.
- Aniline-2:4:6-trimercurihydroxide, *m*-chloro-, and its acetate and chloride (VECCHIOTTI), A., 852.
- β -Anilinoacrylic acid, ethyl ester (STRAUS and VOSS), A., 1124.
- 10-Anilinoanthracene, 1:8-dichloro- (BARNETT, COOK, and MATTHEWS), A., 296.
- 5-Anilino-2-trichlorophenoxybenzoquinone, 6-chloro- (HUNTER and MORSE), A., 839.
- 1-Anilino-3:5-dimethoxybenzene, 2:4-dinitro- (VAN RIJN), A., 510.
- 4'-Anilinodiphenyl, 4-bromo-, and 4-chloro-2:3'-dinitro- (LE FÈVRE and TURNER), A., 1029.
- Anilino-2:4-furodiazole, amino-, and its salts (FBOMM), A., 717.
- 5-Anilino-4-hydroxy-1:3:9-trimethyl-4:5-dihydrouic acid (BILTZ and KLEMM), A., 962.
- 4-Anilino-6:7-indazolequinone (FIESER), A., 625.
- β -Anilino- β -methylpentan- δ -one, β -*p*-chloro-, and its derivatives (BANFIELD and KENYON), A., 828.
- 2-Anilino-1:4-naphthoquinone, 3:6:7-tribromo- (KOHN and SCHWARZ), A., 521.
- 4-Anilino- β -naphthol, 1-amino-, hydrochloride and diacetyl derivative (GOLDSTEIN and RADOVANOVITCH), A., 1134.
- 2-Anilino-1:8:8-trinitronaphthalene, and bromo-, chloro-, iodo-, and nitro- (VAN DER KAM), A., 1240.
- Anilino-*o*-nitrophenylacetoneitrile (REISSERT and LEMMER), A., 528, 625.
- 10-Anilino-9-phenylanthracene, 1:5-dichloro- (BARNETT and MATTHEWS), A., 618.
- 4-Anilino-2-phenyl-3:6(1:6)-dimethylpyrimidinium salts and derivatives (FORSYTH and PYMAN), A., 1156.
- 4-Anilino-2-phenyl-6-methylpyrimidine, methylation and salts of (FORSYTH and PYMAN), A., 1156.
- Anilinophenylphosphoric acid, metallic salts (ZETZSCHE and NACHMANN), A., 1242.
- α -Anilino- α -phenylpropionitriles, *o*-, *m*-, and *p*-hydroxy- (SHIMO), A., 1243.
- α -Anilinopropionitrile, *p*-hydroxy- (SHIMO), A., 1243.
- γ -Anilino- α -phenylpropylene- $\alpha\beta$ -oxide (ZETZSCHE and AESCHLIMANN), A., 1225.
- 2-Anilquinoline methochloride, derivatives of, and their antiseptic properties (BROWNING, COHEN, ELLINGWORTH, and GULBRANSEN), A., 1153.
- Animals, sensitisation of, to sunlight and X-rays (KÄMMERER and WEISBECKER), A., 431.
- iron compounds in (FONTÈS and THIVOLE), A., 424.
- minerals in nutrition of (ORR), A., 429.
- distribution of purines, guanidines, and glyoxalines in (KUTSCHER and AOKERMANN), A., 316.
- eradication of pests on (STRICKLER), (P.), B., 559.
- material for combating pests on (CHEM. FABR. SCHERING, GÖRNITZ, and GOEBEL), (P.), B., 209.
- growing, nitrogen equilibrium in (WEISER), A., 862.
- warm-blooded, catalase content of (BURGE), A., 541.
- Animal fibres, chlorination of textiles made from (SCHWEITZER), (P.), B., 782.
- Animal oils. See Oils, animal.
- Animal products, determination of crude fibres in (MAOH and SEPPER), B., 614.
- Animal tissues, bioluminescence and fluorescence of (HARVEY), A., 1060.
- passage of substances into, in perfusion experiments (PAK), A., 430.
- carbon dioxide and oxygen tension in (CAMPBELL), A., 537.
- respiration and carbohydrate exchange in (MEYERHOF and LOHMANN), A., 753, 754; (TAKANE), A., 754.
- respiration and glycolysis in (LOEBEL), A., 84.
- distribution of fat in (VLADESCO), A., 444.
- distribution of sulphates in (DENTS and LECHE), A., 87.
- Anisaldehyde, 3-nitro-, and its derivatives (DE LANGE), A., 278.
- Anise oil, distinction between star-anise oil and (ZIMMERMANN), B., 298; (DRIESSEN MAREEUW), B., 768.
- Anisic acid, 1- β -octyl ester (RULE and NUMBERS), A., 1038.
- o*-Anisidine, 4-chloro-, benzoyl derivative (RAIFORD and COLBERT), A., 1242.
- 3- and 6-nitro- (C. K. and E. H. INGOLD), A., 833.
- m*-Anisidines, 5-halogeno- (HODGSON and WIGNALL), A., 1034.
- 3-bromo-5-iodo-, 3-chloro-5-bromo-, 3-chloro-5-iodo-, 3:5-di-iodo-, and 3-iodo-5-nitro- (HODGSON and WIGNALL), A., 1034.
- 3:5-dibromo-2:4-dinitro- (KOHN and HELLER), A., 282.
- 2:4:6-tribromo-3-nitro- (KOHN and SEGEL), A., 832.
- 3:4:5-tribromo-2:6-dinitro- (KOHN and SOLTÉSZ), A., 395.
- 4-chloro-, disulphide, disulphoxide, and mercaptan (GAUNTLETT and SMILES), A., 164.
- chlorobromo- and chlorobromonitro-derivatives (KOHN and ROSENFELD), A., 282; (KOHN and SUSSMANN), A., 832.
- o*-fluoro-, and its nitro-derivatives (HOLMES and INGOLD), A., 831.
- 2:6-diiodo-4-amino-, and its salts and acetyl derivative, and 2:6-diiodo-4-nitro- (KALB, SCHWEIZER, ZELLNER, and BERTHOLD), A., 1152.
- 2-nitro-4:5-diamino-, and 2:4-dinitro-5-nitroso- (BORSCHÉ and FESKE), A., 606.
- 3:5-dinitro-2-hydroxylamino- (BORSCHÉ and FESKE), A., 605.
- Anisole-2-methylsulphone, 4-chloro- (GAUNTLETT and SMILES), A., 164.
- Anisole-2-sulphinic acid, 4-chloro- (GAUNTLETT and SMILES), A., 164.
- Anisole-2-sulphinic acids, nitro- (HOLMES and C. K. and E. H. INGOLD), A., 947.
- Anisole-2-sulphonic acid, 4-chloro-, and its sodium salt and chloride (GAUNTLETT and SMILES), A., 164.

- γ*-o-Anisolesulphonylacetone, bromo-derivatives (TRÖGER and PAHLE), A., 523.
- p*-Anisolesulphonylacetophenone, and its derivatives (TRÖGER and DMITROV), A., 78.
- 3-o-Anisolesulphonyl-2-methylquinoline methiodide (TRÖGER and KESTENBACH), A., 1258.
- 3-o-Anisolesulphonyl-2-*p*-toluenesulphonylmethylquinoline (TRÖGER and PAHLE), A., 524.
- Anisomethylamide (BRADY and DUNN), A., 1142.
- Anisotropic liquids. See under Liquids.
- Anisotropy, structure of molecules in relation to (RAMANATHAN), A., 226.
- ω*-o- and *m*-Anisoylacetophenones, and their copper derivatives (BRADLEY and ROBINSON), A., 1145.
- ω*-Anisoyl-3:4-dimethoxyacetophenone, and its copper derivative (BRADLEY and ROBINSON), A., 1145.
- p*-Anisoylglycylarsanilic acid (GIEMSA and TROFF), A., 1162.
- α*-*p*-Anisoylpropionophenone, and its copper derivative (BRADLEY and ROBINSON), A., 1145.
- β*-*p*-Anisylacetylene, *α*-bromo- (GRIGNARD and PERRICHON), A., 382.
- 1-Anisyl-3-acetylhydantoin (BILTZ and SLOTTA), A., 1046.
- p*-Anisyl *p*-aminostyryl ketone, acetyl, benzoyl, and formyl derivatives, derivatives of (DILTHEY and BERRES), A., 728.
- p*-Anisylbenzylcarbinol (ORÉRIOV and TIFFENEAU), A., 172.
- 4-*p*-Anisyl-2:6-di-o-hydroxy-*p*-anisylpyrylium salts and derivatives (DILTHEY, FRÖDE, and KOENEN), A., 1254.
- p*-Anisylidimethyltelluride, and its picrate (MORGAN and DREW), A., 83.
- β*-*p*-Anisylethylglyoxylic acid, *αβ*-dibromo-, and its esters (REIMER), A., 1139.
- 2-*β*-Anisylethyl-1-methyl-4-quinolone, and its hydrochloride (TRÖGER and DUNKER), A., 526.
- p*-Anisylglyoxylanilide, and its oxime (BORSCHKE and FRITZSCHE), A., 393.
- 4-*p*-Anisylhydantoin-1-*α*-propionic acid, and its ethyl esters (HAHN and GILMAN), A., 180.
- Anisylidenhydantoin, absorption spectra of derivatives of (CARR and DOBROW), A., 180.
- 4-Anisylidenhydantoin-1-acetic acid, ethyl ester (HAHN and GILMAN), A., 180.
- methyl ester (HAHN and GILMAN), A., 181.
- 4-Anisylidenhydantoin-1-propionic acid, and its potassium salt, and ethyl ester (HAHN and GILMAN), A., 180.
- methyl ester (HAHN and GILMAN), A., 181.
- 4-Anisylidene-3-methylhydantoin-1-acetic acid, methyl ester (HAHN and GILMAN), A., 181.
- 4-Anisylidene-3-methylhydantoin-1-propionic acid, methyl ester (HAHN and GILMAN), A., 181.
- Anisylidene-*dl*-piperitone (EARL and READ), A., 1040.
- p*-Anisylindazoles, and hydroxy-, and their derivatives (v. AUWERS and STRÖDTER), A., 528.
- 1-Anisyl-3-methylhydantoin (BILTZ and SLOTTA), A., 1046.
- p*-Anisylmethyltelluride-iodide (MORGAN and DREW), A., 83.
- 4-*p*-Anisylxybenzaldehyde, and its derivatives (HARINGTON), A., 724.
- 4-*p*-Anisylxybenzoic acid (HARINGTON), A., 724.
- 4-*p*-Anisylxybenzylhydantoin (HARINGTON), A., 725.
- 4-*p*-Anisylxybenzylidenhydantoin (HARINGTON), A., 725.
- 4-*p*-Anisylxybenzoic acid (HARINGTON), A., 724.
- α*-Anisyl-*β*-phenylethylamine, and its hydrochloride (TORRÈS y GONZALÈS), A., 396.
- o-Anisylsulphonyl-*β*-nitro-3-hydroxyphenylacrylonitriles (TRÖGER and FROMM), A., 69.
- p*-Anisyltellurichloride (MORGAN and KELLET, A., 747.
- p*-Anisylurethane, and *mono*-, *di*-, and *tri*-nitro-, and their derivatives with ammonia (REVERDIN), A., 1243.
- "Anka," enzymes of (HAGIWARA and AOYAMA), A., 1278.
- Anodes, deposition of zinc on, in voltaic cells (HUMBY and PERRIN), A., 689.
- for production of organic acids (TALLADA), (P.), B., 985.
- slimes from, determination of silver, gold, and platinum in (EOKERT), B., 243.
- recovery of selenium from sludge from (MANSFELD-A.-G. F. BERGHAU & HÜTTENBETRIEB, and WAGENMANN), (P.), B., 539.
- cadmium, lead, magnesium, mercury, platinum, tin, and zinc, periodic phenomena at (HEDGES), A., 1213.
- copper and silver, periodic phenomena at (HEDGES), A., 807.
- insoluble, for electrolysis of brine (FINK and PAN), B., 497.
- lead, behaviour of, in electrolysis of zinc sulphate (HOCK and KLAWITTER), B., 17.
- Anthelmintics, o- and *p*-benzylphenols as (KROPP, SCHIRANZ, SCHULEMANN, and WINTHROP CHEM. Co.), (P.), B., 721.
- Anthocyanins, synthesis of (ROBERTSON and ROBINSON), A., 956.
- Anthracene, absorption and emission spectra of (CAPER and MARSH), A., 108.
- catalytic hydrogenation of (v. BRAUN and BAYER), A., 172.
- crude, artificial resins from (BAKELITE GES. and FLORENZ), (P.), B., 502.
- picrate, solubility and dissociation equilibrium of (v. HALBAN and ZIMPELMANN), A., 25.
- molecular compound of trinitrotoluene and (SKRAUF and EISELMANN), A., 999.
- determination of (KOCCH), B., 815; (SIELISCH; SIELISCH and KÖPPEN-KASTROP), (P.), B., 941.
- determination of, by modified Höchst method (JACOBSON), B., 734.
- Anthracene, 1:4-dichloro-, dibromide, and its dihydroxy-derivative, 2:3-dichloro-9:10-dibromo-, and 2:3-dichloro-9-nitro- (BARNETT, MATTHEWS, and WILTSHIRE), A., 1030.
- 1:8-dichloro-10-bromo-, and 1:8:9-trichloro-, dichloride (BARNETT, COOK, and MATTHEWS), A., 295.
- Anthracenes, *meso*-substituted, reactivity of (COOK), A., 838, 953, 1131.
- Anthracene dyes, from dihalogenopyranthrones (GUBELMANN and NEWPORT Co.), (P.), B., 910.
- vat, manufacture of (I. G. FARBERIND.), (P.), B., 868.
- Anthracene-2-thioglycol-3-carboxylic acid, manufacture of (SOC. CHEM. IND. IN BASLE), (P.), B., 942.
- Anthracene-2-thioglycolic acid (SOC. CHEM. IND. IN BASLE), (P.), B., 943.
- Anthracene-2:1-thioindoxyl (SOC. CHEM. IND. IN BASLE), (P.), B., 943.
- Anthracenes, non-existence of (v. BRAUN and BAYER), A., 729.
- Anthranilamide (REISSERT and LEMMER), A., 528.
- Anthranilic acid, amide and ammonium salt, hydrochloride (RUPE and VOGLER), A., 64.
- esters of, and their hydrochlorides (KELLER and SCHULZE), A., 63.
- 4-Anthranilino-2-phenylquinoline (BOEHRINGER & SÖHNE and ROTHMANN), (P.), B., 898.
- Anthranil acetate, 2:3-dichloro- (BARNETT, MATTHEWS, and WILTSHIRE), A., 1030.
- 9-Anthranil acetates, 1- and 4-chloro- (MATTHEWS), A., 295.
- α*-9-Anthranil-*β*-9:10-dihydroanthranylethane (BARNETT and MATTHEWS), A., 618.
- Anthranilpyridinium bromide, 1:4-dichloro- (BARNETT, MATTHEWS, and WILTSHIRE), A., 1030.
- chloride, 1:8:9-trichloro- (BARNETT, COOK, and MATTHEWS), A., 296.
- 10-hydroxy- (MATTHEWS), A., 295.
- Anthraphenone, 10-bromo-, -chloro-, and -nitro- (COOK), A., 838.
- Anthrapurpurin dimethyl ether, and its acetyl derivative (MILLER and PERKIN), A., 174.
- Anthrapurpurinanthranol dimethyl ether, and its diacetyl derivative (MILLER and PERKIN), A., 174.
- Anthraquinone, manufacture of (GREEN), (P.), B., 480.
- purification of (LEWIS and NAT. ANILINE & CHEMICAL Co.), (P.), B., 578, 817.
- catalytic hydrogenation of (v. BRAUN and BAYER), A., 172.
- mercury as catalyst in sulphonation of (MEYER), A., 1146.
- condensation of, with magnesylpyrrole and magnesylmethylketone (MINGOIA), A., 1158.
- derivatives, manufacture of, (BRIT. DYESTUFFS CORP., LTD., PERKIN, FYFE, and MENDOZA; BADISCHE ANILIN- & SODA-FABR.), (P.), B., 658.
- Anthraquinone, 1-amino-, diamino-1:5-diamino-, 4:8-dihydroxy-, and 1:2:3-trihydroxy-, diacetoborates of (DIMROTH), A., 297.
- 2-amino-, manufacture of (CUNNINGHAM and NAT. ANILINE & CHEMICAL Co.), (P.), B., 185.
- 2:3-diamino-, manufacture of (SOC. CHEM. IND. IN BASLE), (P.), B., 625*.
- 2-chloro-, manufacture of (THOMAS and SCOTTISH DYES), (P.), B., 398.
- 1:4-dichloro-, tetrachloride (BARNETT, MATTHEWS, and WILTSHIRE), A., 1030.
- chlorohydroxy-, manufacture of (DODD, SPRENT, and UNITED ALKALI Co.), (P.), B., 869.
- 1-chloro-4-hydroxy-, and its 4-acetyl derivative (GREEN), A., 840.
- 5-chloro-1-hydroxy-, and its acetyl derivative (GREEN), A., 1042.
- 10-chloro-1-hydroxy-, and its derivatives (GREEN), A., 839.
- 1:2:3:4-tetrahydroxy-, manufacture of (FARR, v. BAYER & Co.), (P.), B., 312.

- Anthraquinone, nitro-,** ingestion of (JOHN and FISCHL), A., 430.
- Anthraquinones, diamino-,** oxamic acids from (BRIT. DYESTUFFS CORP., BUNBURY, and ROBINSON), (P.), B., 528.
- hydroxy-,** manufacture of (THOMAS, HERWARD, and SCOTTISH DYES), (P.), B., 312.
- reduction products of** (MILLER and PERKIN), A., 174.
- action of thionyl chloride on** (GREEN), A., 1041.
- colour reactions of** (DE BOER), A., 40.
- Anthraquinone dyes** (FARBW. FORM. MEISTER, LUCIUS, & BRÜNING; BADISCHE ANILIN- & SODA-FABR.), (P.), B., 44; (KRANZLEIN, SEDLMAYR, and GRASSELLI DYESTUFF CORP.), (P.), B., 86*; (BADDILEY, TATUM, and BRIT. DYESTUFFS CORP.), (P.), B., 312*; (MARVIN; GOODRICH, and NEWPORT Co.), (P.), B., 577.
- manufacture of** (FARBW. FORM. MEISTER, LUCIUS, & BRÜNING), B., 311; (DODD, SPRENT, and UNITED ALKALI Co.), (P.), B., 398.
- with affinity for acetyl silk** (BRIT. DYESTUFFS CORP., PERKIN, and HOLLINS), (P.), B., 910.
- for wool** (FARBENF. FORM. BAYER & Co.), B., 973.
- possessing affinity for cellulose acetate silk** (BRIT. DYESTUFFS CORP., PERKIN, and HOLLINS), (P.), B., 398.
- intermediates for** (THOMAS and SCOTTISH DYES), (P.), B., 121.
- indigoid** (SOC. CHEM. IND. IN BASLE), (P.), B., 122*, 150*.
- vat, manufacture of** (SOC. CHEM. IND. IN BASLE), (P.), B., 735.
- derivatives of leuco-compounds of** (JONES, WYLLAM, MORTON, and MORTON SUNDOWN FABRICS), (P.), B., 235.
- halogenated** (I. G. FARBENIND.), (P.), B., 781*.
- Anthraquinone series** (ROLLETT, HAIDER, and MERKA), A., 408.
- manufacture of acylated diamines of** (BRIT. DYESTUFFS CORP., PERKIN, and BUNBURY), (P.), B., 817.
- Anthraquinoneacridine dyes** (SOC. CHEM. IND. IN BASLE), (P.), B., 943.
- Anthraquinoneacridones, manufacture of** (SOC. CHEM. IND. IN BASLE), (P.), B., 942.
- Anthraquinone-2-carboxyl chloride, use of, in qualitative organic analysis** (REICHSTEIN), A., 1225.
- Anthraquinone-2-carboxyl chloride, 1-chloro-** (ROLLETT, HAIDER, and MERKA), A., 408.
- Anthraquinone-2-carboxylanthraquinonylamides, 1-amino-, and 1-chloro-** (ROLLETT, HAIDER, and MERKA), A., 408.
- Anthraquinone-2-carboxyl-1'-chloro-2'-anthraquinonylamide, 1-chloro-** (ROLLETT, HAIDER, and MERKA), A., 408.
- Anthraquinone-2-carboxylic acid, esters of** (REICHSTEIN), A., 1225.
- Anthraquinone-2-carboxylic acid, 3-bromo-8-nitro-1-amino-** (EDER and MANOUKIAN), A., 839.
- Anthraquinone-2-carboxyl-5'-nitro-1'-anthraquinonylamide, 1-chloro-** (ROLLETT, HAIDER, and MERKA), A., 408.
- Anthraquinone-4'-chloro-4-amino-2:1-acridone** (SOC. CHEM. IND. IN BASLE), (P.), B., 943.
- Anthraquinone-4'-chloro-4-amino-2:1-thioxanthone** (SOC. CHEM. IND. IN BASLE), (P.), B., 942.
- Anthraquinone-2-glycine-3-carboxylic acid** (SOC. CHEM. IND. IN BASLE), (P.), B., 942.
- Anthraquinone-8-oxazolone, and 5-nitro-** (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 149.
- Anthraquinone-β-sulphonic acid, isolation and purification of** (GUBELMANN, GOODRICH, and NEWPORT Co.), (P.), B., 578; (NEWPORT Co.), (P.), B., 1007.
- as reagent for alkaloids** (ROSENTHALER), A., 186.
- Anthraquinonethioxanthenes, manufacture of** (SOC. CHEM. IND. IN BASLE), (P.), B., 942.
- α-Anthraquinonylcarbamides** (BRIT. DYESTUFFS CORP., PERKIN, and HOLLINS), (P.), B., 398.
- Anthraquinonylcarbazoles, preparation of** (I. G. FARBENIND.), (P.), B., 868.
- Anthraquinonyl-2:3-indoxyl** (SOC. CHEM. IND. IN BASLE), (P.), B., 943.
- 4-Anthraquinonyl-1-mercapto-5'-chlorobenzene-2'-carboxylic acid, 4-amino-** (SOC. CHEM. IND. IN BASLE), (P.), B., 942.
- Anthrazylon in coal** (STACH), B., 569.
- Anthrone, 10-mono- and 4:10-di-chloro-, chlorobromo-, and chlorohydroxy-** (MATTHEWS), A., 295.
- 2:3-dichloro-** (BARNETT, MATTHEWS, and WILTSHIRE), A., 1030.
- 4:5-di- and 1:8:9-tri-chloro-, and 1:8-dichloro-9-hydroxy-** (BARNETT, COOK, and MATTHEWS), A., 295.
- meso-Anthrone, hydroxy-, reactions of** (MATTHEWS), A., 295.
- Anti-coagulant, phosphorus-free, from intestines of horse** (DOYON and VIAL), A., 424.
- Anti-corrosion preparations** (DOKTER), (P.), B., 67; (FOWLER and EDGER), (P.), B., 759, 988; (EBERHARD), (P.), B., 761.
- Anti-detonators, theory of** (MURAOUR), B., 116.
- retardation of ignition produced by** (DUMANOIS), B., 619.
- Anti-freezing solution** (CROFOOT and LARROWE CONSTRUCTION Co.), (P.), B., 521.
- Antiketogenic action, mechanism of** (WEISS and ALTAI), A., 642.
- Anti-knock materials, effect of, on spontaneous ignition temperatures of inflammable liquids** (TANAKA and NAGAI), B., 906.
- organo-metallic** (CALLENDAR, KING, and SIMS), B., 618.
- Antimonite from Wolfsberg, Harz** (GRAVINO), A., 709.
- Antimony, electro-deposition of** (LUKAS and JILEK), A., 583.
- smelting of ores of arsenic, mercury, and** (OESTERR. BAMA-G.-BÜTTNER-WERKE and JAHN), (P.), B., 549.
- regulus, manufacture of** (BÖRNER), B., 244.
- recovery of, in manufacture of flavanthrone** (ADAMSON, CARLETON, and DU PONT DE NEMOURS & Co.), (P.), B., 625.
- spectrum of, in a magnetic field** (VAN DER HART), A., 874.
- absorption spectrum of the vapour of** (FRAYNE and SMITH), A., 550.
- Röntgen-ray spectrum of** (JÖNSSSEN), A., 214.
- under-water spark spectrum of** (BUFFAM and IRETON), A., 1.
- Antimony alloys with aluminium, electrolysis of** (KREMANN and DELLACHER), A., 802.
- with lead** (DEAN, HUDSON, and FOGLER), B., 93; (GEPPERT), (P.), B., 590.
- with lead and tin, hardening of** (GUILLET), B., 588.
- with silver, electrolysis of** (KREMANN and BAYER), A., 802.
- with thallium, potential of** (VINOGOROV and PETRENKO), A., 361.
- Antimony compounds, complex, manufacture of** (I. G. FARBENIND.), (P.), B., 805.
- use of, in enamels for cooking utensils** (SVAOR), B., 192.
- chemotherapy of, in kala-azar infection** (BRAHMACHARI and DAS), A., 541; (BRAHMACHARI), A., 864.
- Antimony salts, manufacture of** (MILBAUER), B., 787.
- Antimony pentachloride, dissociation of** (BRAUNE and TIEDJE), A., 578.
- compounds of, with cholesterol and similar compounds** (STEINLE and KAHLENBERG), A., 633.
- dihydride** (WEEKS and DRUOE), A., 36.
- iodates, complex** (P. and S. N. RAY), A., 1015.
- trioxide, hydrates of** (SIMON and POEHLMANN), A., 124.
- Antimonic acid, preparation and properties of solutions of** (GLIXELLI and DENISZCZU-KOYNA), A., 371.
- Thioantimonates, decomposition of** (WILSON), (P.), B., 665.
- Trihydroxytri-iodoantimonic acid** (P. and S. N. RAY), A., 1015.
- Antimony sulphide, golden, production of** (SOUVIRON), (P.), B., 889.
- analysis of** (HOOK), B., 200.
- determination of calcium sulphate in** (CHIAPPERO), B., 874.
- sulphides** (CURRIE), B., 449.
- Antimony organic compounds** (MORGAN and DAVIES), A., 507.
- with alkalis or alkaline earths** (FARBENFAB. FORM. BAYER & Co.), (P.), B., 996.
- water-soluble complex, with quinoline** (I. G. FARBENIND.), (P.), B., 901.
- aromatic** (SCHMIDT and HOFFMANN), A., 533.
- heterocyclic** (BINZ and RÄTH), (P.), B., 512.
- Antimony cacodyl. See Tetramethyldistibine.**
- Antimony compounds with polyhydric phenols** (CHRISTIANSEN), A., 722.
- Antimony determination and separation:—**
- determination of** (NAKASONO and INOKO), A., 1115.
- determination of, electrolytically** (SCHLEICHER, TOUSSAINT, and TROQUAY), A., 1020.
- separation of** (MANCHOT, GRASSL, and SCHREEBERGER), A., 40.
- separation of lead and** (MARKS and AMER. SMELTING & REFINING Co.), (P.), B., 635.
- separation of tin and, in presence of lead** (LIDLE), B., 327.
- Antimony ores, treatment of** (COOLBAUGH, READ, and COMPLEX ORES RECOVERIES Co.), (P.), B., 921.
- of Lake George, concentration of** (PARSONS), B., 672.
- Anti-oxygens** (MOUREU and DUFRAISSE), A., 581; (MOUREU, DUFRAISSE, and BADOCHÉ), A., 1031, 1215.
- Antipepsin of serum** (MOZOLOVSKI and HILAROVICZ), A., 202.
- Antipyrine, solubility of mixtures of acetanilide and** (OLIVERI-MANDALÀ and FORNI), A., 238.
- solubility of mixtures of quinine hydrochloride and** (OLIVERI-MANDALÀ and CARLI), A., 238.

- Antipyrine and its acetamido-derivative, compounds of veronal with (PFEIFFER and ANGERN), A., 739.
- Antipyrine, amino- (RODIONOV), A., 533.
- Antirachitic activity in relation to photo-activity (VOLLMER and SEREBRIJSKI), A., 1181.
- substances (BILLS), A., 437, 645; (BILLS and McDONALD), A., 981.
- value of substances, determination of (ZUCKER and UNIVERSITY PATENTS), (P.), B., 172.
- Antiseptics, preparation of (CROSNIER), (P.), B., 998.
- effect of hydrogen-ion concentration on action of (KURODA), A., 541.
- internal, use of hexylresorcinol and its homologues as (LEONARD), B., 298.
- Antihemion*, bromine in gland cells of (SAUVAGEAU), A., 210.
- Antitoxon (WOLFF and DE JONGH), A., 91.
- Anti-toxins, preparation of, protein-free (DOLD and FREUDENBERG), A., 87.
- Antitrypsin (SEREJSKI), A., 543; (STANDENATH), A., 1276.
- Aorta, healthy and arteriosclerotic (SCHÖNHEIMER), A., 1269.
- n*- and *iso*-Apioles, and their derivatives (DELÉPINE and LONGUET), A., 1036.
- Apocynaceae Dyera*, jelutong from latex of (EATON, GEORGI, and TEIK), B., 1021.
- Apozymase and co-zymase (NEUBERG and GOTTSCHALK), A., 95.
- Apples, occurrence of arsenic in (COX), B., 338.
- pectin from (PAUL), (P.), B., 766.
- extraction of sugar from (DISTILLERIES DES DEUX-SÈVRES), (P.), B., 294.
- physiology of (BROWN), B., 605.
- Canadian sprayed, arsenic in (SHUTT), B., 643.
- Grimes, physical and chemical changes of (PLAGGE, MANEY, and GERHARDT), A., 1282.
- maturing, physical and chemical characteristics of, in relation to the time of harvest (NELLER and OVERLEY), B., 1027.
- white Calville, relative loss of weight of, during storage (RIVIÈRE and PICHARD), B., 605.
- ash analysis of, and effect of environment on their mineral constituents (BROWN), B., 605.
- Apple juice (ECKART), B., 296.
- determination of starch in (ECKART and DIEM), B., 688.
- Apple marc, dried, identification of, in foods (BRIOUX), B., 510.
- Apple pulp, detection of, in jam (PARTIDGE), B., 719.
- Apple trees, chemical constituents of fruit spurs of (KRAYBILL, POTTER, WENTWORTH, BLOOD, and SULLIVAN), A., 1065.
- phloridzin in (HARVEY), A., 981.
- Aquo-ammonocarbonic acids (BLAIR), A., 277.
- Aquobisethylenediamminecupric salts (MORGAN and BURSTALL), A., 1027.
- Aquopentamminechromic salts. See under Chromium.
- Aquopentamminecobalt salts. See under Cobalt.
- Aquotisation, kinetics of (BRÖNSTED, DELBANGO, and VOLQUARTZ), A., 1107.
- Arabic acid, and its alkali salts, optical rotation of (RAKUZIN), A., 111.
- Arabinose 2:4-dibromophenylhydrazon (VOTOČEK, ETTTEL, and KOPPOVA), A., 501.
- d*-Arabinose, oxidation of (McOWAN), A., 941.
- l*-Arabinose from mesquite gum (ANDERSON and SANDS), B., 169.
- action of almond emulsin on (BRIDEL and BÉGUIN), A., 501.
- d*- and *l*-Arabinose, oxidation of (EVANS, BUEHLER, LOOKER, CRAWFORD, and HOLL), A., 148.
- l*-Arabinosecarbamide monohydrate, and its acetyl and benzoyl derivatives (HELPERICH and KOSCHE), A., 273.
- Arachis nut. See Pea-nut.
- Arachis oil, saturated acids of (MORGAN and HOLMES), A., 712.
- higher fatty acids from (HOLDE and GODBOLE), A., 268, 498; (KOHEN), B., 98.
- Aralkyl halides, oily and resinous condensation products from aromatic hydrocarbons and (FARBW. VORM. MEISTER, LUCIUS, and BRÜNING), (P.), B., 203.
- Arbestine, use of, in the paint industry (ROSENBERG), B., 955.
- Arfvedsonite, composition of (GOSSNER), A., 595.
- Arginine, interchangeability of histidine and, in metabolism (ROSE and COX), A., 754.
- conversion of, into ornithine, and its acetyl derivative (BERGMANN and KÖSTER), A., 1235.
- metabolism. See Metabolism.
- determination of (KOSSEL and STAUDT), A., 967.
- determination of, in proteins (PLIMMER and ROSEDALE), A., 313.
- Arginine, separation of histidine and (VICKERY and LEAVENWORTH), A., 854.
- d*-Arginine carbonate, preparation of (PRATT), A., 603.
- Argol, analysis of (GLASER), B., 210.
- Argon, spectrum of (MEISSNER), A., 766; (SAUNDERS), A., 1070.
- X-ray absorption spectrum of (COSTER and VAN DER TUUR), A., 550, 766.
- arc spectrum of (MEISSNER), A., 1186.
- excitation potentials of spectrum of (MOHLER), A., 988.
- ionisation in (LAPORTE and DA SILVA), A., 877.
- photo-electric ionisation of (MOHLER), A., 877.
- ionisation by impacts in (COMPTON and VAN VOORHIS), A., 1074.
- second ionisation potential of (SMYTH and BARTON), A., 1073.
- sparking potentials of, between aluminium electrodes (VAN VOORHIS), A., 1072.
- electric discharge in mixtures of nitrogen and (CLARKSON), A., 107.
- in blood (HACKSPILL, ROLLET, and NICLOUX), A., 536.
- Aromatic compounds, constitution and properties of (PASTAK), A., 340.
- isomerism in (CHAPMAN), A., 161.
- isomeric, heat capacity and heat of crystallisation of (ANDREWS, LYNN, and JOHNSTON), A., 668.
- stereochemistry of (KUHN and ZUMSTEIN), A., 513.
- volume contraction in formation of, at absolute zero (HERZ), A., 778.
- catalytic hydrogenation of, in presence of copper (KUBOTA and HAYASHI), A., 1041.
- rate of removal of nitric acid from (RYAN and GLYNN), A., 606.
- nitration of, with bismuth nitrate (SPIEGEL and HAYMANN), A., 390.
- mercuration of (COFFEY), A., 629.
- reduction of, by sodium hyposulphite (FARMER and FIRTH), A., 256.
- substitution in (DAVIES and LEEFER), A., 827; (FLÜRSCHHEIM and HOLMES), A., 830.
- substitution in the nucleus in (BARNETT, COOK, and MATTHEWS), A., 295; (BARNETT, MATTHEWS, and WILTSHIRE), A., 1030.
- directive power of groups in substitution in (ALLAN and ROBINSON), A., 396; (OXFORD and ROBINSON; ROBINSON and SMITH; ALLAN, OXFORD, ROBINSON, and SMITH; LEA and ROBINSON), A., 397; (HOLMES, and C. K. and E. H. INGOLD), A., 947.
- replacement of halogens in (CLARK and CROZIER), A., 158.
- introduction of selenocyano-groups into (CHALLENGER, PETERS, and HALÉVY), A., 965.
- fifty years' progress in (SZAMATOLSKI), B., 850.
- polynuclear, molecular configuration of (CHRISTIE and KENNER), A., 408; (CHRISTIE, HOLDERNESS, and KENNER), A., 518.
- Aromatic compounds, nitro- and nitroso-, determination of, potentiometrically (DACHSELT), A., 1049.
- Arrowroot, sweet-potato starch in (STUBBS), B., 800.
- Arsanilic acid, synthesis of polypeptide-like derivatives of (GIEMSA and TROPP), A., 1162.
- Arsenic, smelting ores of antimony, mercury, and (OESTERR. BAMAG-BÜTTNER-WERKE and JAHN), (P.), B., 549.
- magnetic effects in (LITTLE), A., 998.
- yellow, preparation of solutions of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 458; (I. G. FARBENIND.), (P.), B., 744.
- action of, on cyanides in liquid ammonia (BERGSTROM), A., 1113.
- occurrence of, in apples (COX), B., 338.
- in Canadian sprayed apples (SHUTT), B., 643.
- function of, in soda-lime-silica glasses (FIRTH, HODKIN, PARKIN, and TURNER), B., 585.
- effects of, on steel (CAMERON and WATERHOUSE), B., 491.
- removal of, from tin (HARRIS), (P.), B., 921.
- from burner gases (METALLBANK & METALLURGISCHE GES. and KURZ), (P.), B., 320.
- presence of, in burner gases and its bearing on "Haff" disease (GLASER), B., 358.
- as cause of "gulf" disease (BIGINELLI), B., 302.
- Arsenic compounds, attack of, on fireclay refractories (TURNER), B., 667.
- colloidal, manufacture of (CHWALA and ODERBERGER CHEM. WERKE), (P.), B., 406.
- tolerance to (E. and J. KEESER), A., 92.
- toxicity of, under reduced pressure (ISELIN), A., 200.

- Arsenic tribromide**, equilibria in binary systems with (PUSHIN and LÖWY), A., 357.
trichloride, complex salt of benzenediazonium chloride and (SCHMIDT and HOFFMANN), A., 533.
dihydride (WEEKS and DRUCE), A., 36.
Arsenides, extraction of, from ores (SANDERS), (P.), B., 548.
Arsenic trioxide (arsenious oxide), physico-chemical properties of (ROTH and SCHWARTZ), A., 350.
 melting point of (TAMMANN and BÄTZ), A., 1087.
 vapour pressure of (RUSHTON and DANIELS), A., 342.
 adsorption of, by ferric hydroxide and ferric magnesium hydroxide gels (CLAUVERA), A., 672.
pentoxide (arsenic anhydride), manufacture of (ASKENASY), (P.), B., 823.
 equilibrium of barium oxide, water, and (HENDRICKS), A., 358.
Arsenious acid, adsorption of, by "saccharated" iron (HERBOTH), A., 468.
 action of nitrogen oxides with, in presence of sulphuric acid (BAILEY), B., 628.
 catalysis of the reaction of permanganic acid with (LANG), A., 581.
 titration of, with permanganates (CANTONI), B., 663.
 determination of (NAKASONO and INOKO), A., 1115.
Arsenites, action of, on halogenated organic compounds (BALABAN), A., 623.
 effect of, on sugar in blood (VAN DYKE), A., 92.
Arsenic acid and its salts, manufacture of (BADISOHE ANILIN- & SODA-FABR.), (P.), B., 320.
 determination of (FRANCIS), A., 490.
 determination of, iodometrically (ORMONT), A., 375; (ROSENTHALER), A., 702.
Arsenates, manufacture of (BASSETT), (P.), B., 89; (JENKINS, BERGER, and PITTSBURGH PLATE GLASS CO.), (P.), B., 876; (BASSETT and LATHROP), (P.), B., 708.
 action of, on phosphorylation (NEUBERG and KOBEL), A., 1108.
 as soil insecticides (LEACH), B., 840.
Arsenic subsulphide (FARMER and FIRTH), A., 256.
trisulphide, production of (I. G. FARBERIND. and DREYER), (P.), B., 946.
 colloidal, preparation of solutions of (FAUST), (P.), B., 360.
 sols, effect of acids on the electric charge of (MUKHERJEE and CHAUDHURY), A., 352.
 coagulation of (GHOSH, BHATTACHARYA, and DHAR), A., 348.
Arsenic organic compounds (KING and MURCH), A., 186; (BALABAN and KING), A., 187; (MASCHMANN), A., 418; (DEUTS. GOLD- & SILBER-SCHNEIDENSTALT, and ALBERT), (P.), B., 462.
 with albumin (BALLY and HACO-GES. A.-G. BERN), (P.), B., 514*.
 with pyrroles (FISCHER and MÜLLER), A., 75.
 with thiophen (FINZI), A., 186.
 aromatic (SCHMIDT and HOFFMANN), A., 533.
 determination of quinquivalence in, by thermal analysis (PEAT), A., 418.
 asymmetric, resolution of (MILLS and RAPER), A., 186.
 heterocyclic (BINZ and RÄTH), (P.), B., 512.
Arsenic halides, compounds of pyridine with (DAFERT and MELINSKY), A., 622.
Arsenio detection, determination, and separation :—
 detection of, with calcium hypophosphite (DEUSSEN), A., 814.
 mercuric bromide paper for detection of (KEMMERER and SCHRENK), A., 928.
 danger of nitric acid in detection of, by Marsh's test (SCHOOF), A., 872.
 detection of, in cocoa (LÜHRIG), B., 140.
 detection of, in glass (GEILMANN), B., 877.
 detection and determination of, in gases (LOCKEMANN), A., 1221.
 determination of (BANG), A., 39; (ROSENDAHL), B., 243.
 effect of cellulose on determination of (WARD), A., 1018.
 determination of, electrolytically, in chemicals (EVERS), B., 803.
 determination of, as the element and as magnesium ammonium arsenate (FRIDL), A., 591.
 determination of, in organic compounds (TER MEULEN), A., 490; (WINTERSTEINER and HANDEL), B., 994.
 determination of, in silver arsenobenzenes (CAZZANI), B., 107.
 determination of, in urine (BANG), A., 195.
 determination of, and its separation from selenium (FRIDL), A., 702.
Arsenio detection, determination, and separation :—
 separation of tin and (LAHEY and VULCAN DETINNING CO.), (P.), B., 360.
Arsenio ores, treatment of (COOLBAUGH, READ, and COMPLEX ORES RECOVERIES CO.), (P.), B., 921.
Arsenicals, trypanocidal action of (DURHAM, MARCHAL, and KING), A., 1173.
Arsenobenzene compounds, unsymmetrical, production of (DEUTS. GOLD- & SILBER-SCHNEIDENSTALT, and ALBERT), (P.), B., 462.
Arsenobenzene, 3:4-diamino-, benzene-, and toluene-sulphonyl derivatives (HEWITT, KING, and MURCH), A., 851.
 3:4-diamino-4'-hydroxy-, benzoyl derivative (KING and MURCH), A., 186.
 dihydroxydiamino-, preparation of solutions of derivatives of (MACLEWEN), (P.), B., 646*.
 5:5'-diiodo-3:3'-diamino-4:4'-dihydroxy-, diacetyl derivative and 5:5'-diiodo-3:3'-dinitro-4:4'-dihydroxy- (MACALLUM), A., 965.
Arsenobenzenes, behaviour of, with molecular oxygen (MASCHMANN), A., 851.
 value of the D. M. index with regard to toxicity of (DE MYT-TENAERE), B., 385, 645.
 determination of toxicity of (CONTARDI and CAZZANI), B., 994.
 silver derivatives, determination of arsenic and silver in (CAZZANI), B., 107.
Arsenobenzenes, aminohydroxy-, aminoaryl derivatives of (HEWITT and KING), A., 746.
Arseno-compounds, aromatic, and their complex metal compounds, preparation of derivatives of (FARBW. VORM. MEISTER, LUCIUS, and BRÜNING), (P.), B., 770.
 2:2'-Arsenothiophen, and 5:5'-dibromo-, -diiodo-, and -dinitro-5:5'-diiodo- (FINZI), A., 187.
Arsenotungstovanadic acid, ammonium salts (CANNERY), A., 258.
Arsenoxides, aromatic (CASSELLA & Co.), (P.), B., 932.
Arsines, tertiary, preparation of (HUNT and TURNER), A., 186.
Arsinetri-N-piperidinium chloride, toxicity of (LEONARD), A., 1058.
Arsinic acids, hydroxyalkyl derivatives (ÉTAB. POULENC FRÈRES and OCHSLIN), (P.), B., 964.
 hydroxy-, aliphatic, and their derivatives (OCHSLIN and ÉTABL. POULENC FRÈRES), (P.), B., 514*, 515*.
 6-Arsino-1:2-dihydroquinoxaline, 3-amino-, and its ammonium salt and benzoyl derivative (LEWIS and BENT), A., 628.
 m- and p-Arsinophenyl alkyl carbonates, and 2-nitro- (HAMILTON and JOHNSON), A., 746.
 β-[Arsinophenylamino]ethyl alcohols (ABBOTT LABORATORIES), (P.), B., 851.
 N-4-Arsinophenylaminomalonic acid (LEWIS and BENT), A., 628.
 γ-[Arsinophenylamino]propyl alcohols (ABBOTT LABORATORIES), (P.), B., 851.
Arsinophenylcarbamic acids, chloroalkyl esters (ABBOTT LABORATORIES), (P.), B., 851.
 N-4-Arsinophenylglycylamide, N-2-amino- (LEWIS and BENT), A., 628.
 6-Arsino-2-phenylquinoline-4-carboxylic acid (CALVERY, NOLLER, and ADAMS), A., 187.
 6-Arsinoquinoxaline, 2:3-dihydroxy- (LEWIS and BENT), A., 628.
Arsinosoquinine, chloro-, and its benzoyl derivative (ERBEN, PHILIPPI, SCHNIDERSCHITZ, SPORER, and DIAMANT), A., 188.
Arsinylethyltrimethylammonium chloride, and dichloro- (RENSHAW and WARE), A., 155.
Artemisia, determination of santonin in (VOGHTERR), B., 510.
Arteriosclerosis, preparation for treating (MLADEJOSKY), (P.), B., 466*.
Artichokes, n-butyl alcohol and acetone from fermentation of (DESBOROUGH, THAYSEN, and GREEN), (P.), B., 1026.
 Jerusalem, variations in individual sugars in, during growth (COLLINS and GILL), B., 338.
Ariocarpus Kuntleri. See Tutor.
Aryl alkyl ethers, reactions of tellurium tetrachloride and (MORGAN and KELLETT), A., 747.
 borates, carbonates, phosphates, and silicates, action of magnesium organic halides with (GILMAN and VERNON), A., 718.
 groups, reversible migration of (CHAPMAN), A., 1138.
Arylalkylcarbinols and their corresponding sulphonic acids, optical rotation of (LEVENE and MIKESKA), A., 1225.
Arylarseno-compounds, amino-, manufacture of acyl derivatives of (NEWBERRY and MAX & BAKER), (P.), B., 420.
Arylazobenzenes, o-amino-, oxidation of, by hydrogen peroxide in acetic acid solution (CHARRIER and CRIPA), A., 848.
Arylhydroxylamines, β-polyntro- (BORSCHKE and FESKE), A., 605.

- Arylidoanthraquinone derivatives (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 866.
- Arylstibinic acids (CHEM. FABR. v. HEYDEN), (P.), B., 514.
- Arylsulphonamides, halogen-substituted, salts of (CHEM. FABR. v. HEYDEN), (P.), B., 512.
- β -Arylsulphonylquinolines, reduction of (TRÖGER and UNGAR), A., 524.
- Arysulphuric acids (BURKHARDT and LAPWORTH), A., 511.
- "Asabi-Promoloid," manual experiments with (BLANCK and SCHEFFER), B., 601; (BOTTINI), B., 641; (MÜNTER), B., 684.
- Asbestine, determination of, in lithopone paint (GERMUTH), B., 21.
- Asbestos-cement products, impregnation of, with sulphur (KOBBE and TEXAS GULF SULPHUR CO.), (P.), B., 825.
- Asbestos ore, treatment of (DOLBEAR and SELECTIVE TREATMENT Co.), (P.), B., 709.
- Asbestos paper (SULZBERGER), (P.), B., 483*.
- Ascaridole, determination of, in chenopodium oil (PAGET), B., 462.
- Ascidia mentula*, blood of (DUVAL and PRENANT), A., 191.
- Ash, determination of, in drugs (FIGDOR), B., 383.
- Ash-loams, Japanese volcanogenic (SEKI), A., 1119.
- Ashes, apparatus for recovering heat from (BRINOHENTI), (P.), B., 908*.
- from furnaces, grading of (HADFIELD), (P.), B., 121*.
- Ashing of small quantities of material (DAFERT), A., 139.
- wet, apparatus for (TURNER), A., 700.
- Asparagine, rotatory power of (LIQUIER), A., 906.
- dehydrogenation of, and its α -bromopropionyl derivative (BERGMANN, KANN, and MIEKELEY), A., 1235.
- chromium complex compounds with (FLORENCE and COUTURE), A., 715.
- Asparagus, growth of (WORKING), A., 438.
- Aspartic acid, preparation of (PACHLOPNIK), B., 298.
- configuration of (FREUDENBERG and NOÉ), A., 53.
- L*-Aspartic acid, bacterial synthesis of, from fumaric acid and ammonia (QUASTEL and WOLFE), A., 868.
- and its ethyl and methyl esters and acid chloride, acyl derivatives of (FREUDENBERG and NOÉ), A., 54.
- Aspergillus*, action of species of, on gluconic acid (WEHMER; SCHREYER), A., 147.
- Aspergillus fumigatus*, action of radium on (A. and R. SARTORY and MEYER), A., 869.
- Aspergillus niger* (*Sterigmatocystis nigra*), utilisation of cystine and thiocarbamide by (RIPEL), A., 204.
- efficiency of nitrogen compounds, dextrose, and organic acids for growth of (BONNET, DUQUÉNOIS, and VINCENT; TERROINE and BONNET), A., 1178.
- acid production by (BERNHAEVER), A., 978.
- pigments of (FREY), A., 869.
- effect of vitamin-B on growth of (SCHELLING), A., 644.
- Aspergillus oryzae*, water-soluble phosphatides of (GRAFE and MAGISTRIS), A., 99.
- Asperuloside in plants (HÉRISSEY), A., 547.
- Asphalt, determination of coefficient of cubical expansion of (MALLISON, JACOBSON, and SARRE), B., 264.
- determination of melting points of (LAGERQVIST and FREDMAN), B., 261.
- adsorption of, from mineral oils, etc. by hydrosilicates (HERBST), B., 523.
- residues, purified, production of, from crude petroleum (MOSS and DE LAVAL SEPARATOR Co.), (P.), B., 1005.
- blown oil, production of (MILLER and BARBER ASPHALT Co.), (P.), B., 655.
- hard, determination of, in dark mineral oils (HOLDE), B., 1003.
- Syzran (PARSCHIN), B., 475.
- Trinidad pitch lake, preparation of (PINE), (P.), B., 655.
- waste, production of lampblack from (DIVINE), (P.), B., 232.
- Aspidium filix mas* (male fern), chemical composition of spores of (KIESEL), A., 440.
- active principles from ether extracts of (FUMAROLA), (P.), B., 932.
- Aspirin. See *o*-Acetoxybenzoic acid.
- Assimilation, theory of (VORLÄNDER), A., 148.
- Assimilation, respiration, and fermentation (WINDISCH), B., 603.
- of plants. See Plants.
- Asteriastigma macrocarpa*, oil of (ANDRÉ), B., 98.
- Atomolysis, theory of (SAMESHIMA), A., 118.
- Atmosphere, transparency of, to the visible spectrum (CABANNES and DUFAY), A., 1080.
- equilibrium of carbon dioxide in (LEGENDRE), A., 143.
- ozone in (DOBSON and HARRISON), A., 140, 493; (CHREE), A., 494.
- Atmosphere. See also Air.
- Atoms, structure of (STINTZING; CABRERA), A., 7.
- and spectra (McLENNAN, McLAY, and SMITH), A., 874; (HARTREE), A., 985.
- in relation to crystal structure (HUGGINS), A., 458.
- electrical structure of (BRIGGS), A., 1194.
- electronic structure of, in relation to valency (GRIMM and SOMMERFELD), A., 560.
- influence of electron structure of, on the ionic radius (v. STACKELBERG), A., 221.
- structure of nuclei of (REINICKE), A., 773.
- stability of nuclei of (STRUM), A., 656.
- number of electrons and α -particles in nuclei of (NAGAOKA), A., 1075.
- polarisabilities of cores of (SWIRLES), A., 1191.
- optical behaviour of (DARWIN), A., 7.
- magnetic properties of (KUNZ, TAYLOR, and RODEBUSH), A., 990.
- orientation of, in a magnetic field (SCHÜTZ), A., 1075.
- size of (LUNNON), A., 333.
- relative sizes of ions and (BRUNETTI; DAVEY), A., 107.
- fields of force in (UREY), A., 1078.
- forces between (LENNARD-JONES), A., 11.
- forces between ions and (LENNARD-JONES and DENT), A., 888.
- coupling of quantum vectors in (GOUDSMIT and UHLENBECK), A., 333.
- mechanics of (BRILLOUIN; WENTZEL), A., 773.
- vibration frequency of (SIRK), A., 881.
- excitation of, by electronic collision (NORDHEIM), A., 654.
- Bohr's, theory of emission from (PALACIOS), A., 451.
- mechanical aspects of (BRACKETT and SNODDY), A., 1078.
- intensity distribution in (BARTELS), A., 773.
- from point of relativity (VALLARTA), A., 1078.
- complex, dynamical model for (SLATER), A., 991.
- excited, emission of light by (TERENIN), A., 776.
- sphere of action of (SCHÜTZ), A., 216.
- ionised, mechanics of assemblies of (FOWLER), A., 553.
- light, critical potentials of *K*-levels of (HOLWECK), A., 552, 874.
- magnetic, structure of (FORRER), A., 878, 1189.
- non-hydrogenic, fine structure of spectral lines of (RUARK, MOHLER, and CHENAULT), A., 1069.
- rotation of the orbit of the radiating electron in (WALTER), A., 881.
- quadrupole, energy radiated by (PLACINTEANU), A., 1187.
- radiating, ionisation equilibrium of (GERASIMOVIC), A., 1191.
- recoil, mobility of (BRIGGS), A., 332.
- stripped, doublets in spectra of (GIBBS and WHITE), A., 1071.
- Atomic number and volume, relation between (DEL FRESNO), A., 450, 555, 1195.
- and structure of crystals (SCOTT), A., 662.
- Atomic weight of boron (BRISCOE, ROBINSON, and STEPHENSON), A., 219.
- of chlorine (HARKINS and STONE), A., 553.
- of germanium (BAXTER and COOPER), A., 5.
- of lead (RICHARDS, KING, and HALL), A., 771.
- of silicon (BRISCOE and ROBINSON), A., 331; (ROBINSON and SMITH), A., 771; (JAEGER), A., 878.
- of silver (RILEY and BAKER), A., 1190.
- of uranium lead (RICHARDS and HALL), A., 449.
- Atomic weights, determination of (MOLES), A., 654.
- calculation of (WASHBURN), A., 1075.
- constancy of (BRISCOE and ROBINSON), A., 331.
- Atomising apparatus (MARGESCHE), (P.), B., 81*.
- Atoxyl, poisoning of lipase by (RONA and GYOTOKU), A., 432.
- Atranol, and its derivatives (PFAU), A., 837.
- Atranorin, constitution of (PFAU), A., 836.
- Atropine, inactivation of, by rabbit serum (LA BARRE), A., 92.
- pharmacological evaluation of solutions of (KÜHL), A., 212.
- sulphate, instability of (BODNÁR and FERENCZY), A., 183.
- determination of (BOURCET), B., 298.
- 2-Auromercaptobenzoic acid, 4-amino-, preparation of a stable derivative of (I. G. FARBENIND.), (P.), B., 900.
- Aurora borealis, spectrum of (VEGARD), A., 660.
- Austenite, equilibrium of, with carbon oxides (TAKAHASHI), B., 670.
- change of, to troostite (HONDA), B., 826.
- Autoclaves, apparatus for taking samples from (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 177, 473.

- Autolysis (RONA, MISLOWITZER, and SEIDENBERG), A., 93;
(STEPPUHN and TIMOFEJEVA), A., 976; (STEPPUHN, PEWSNER, and TIMOFEJEVA), A., 1174.
of animal organs (KAPLANSKY), A., 542.
- Autoxidation (TRAUBE and LANGE), A., 257; (MOUREU and DUFRAISSE), A., 581; (MOUREU, DUFRAISSE, and BADOUE), A., 1031, 1215.
- Autunite from Lurisia (PORLEZZA and DONATI), A., 143.
- Avitaminosis, lactic acid in urine in (ROSENWALD), A., 436.
metabolism in (BIOKEL), A., 326.
- Avogadrite from Vesuvius (ZAMBONINI), A., 934.
- Azelaic acid, salts, thermal decomposition of (RUZICKA and BRUGGER), A., 615.
esters (CHUIT), A., 499.
methyl ester (NOLLER and ADAMS), A., 712.
- Azelaic acid, $\alpha\alpha$ -dibromo-, ethyl ester (v. BRAUN and MÜNCH), A., 1122.
 $\alpha\alpha$ -dihydroxy-, and its silver salt and ethyl ester (GOSS and INGOLD), A., 821.
- Azeotropic mixtures, binary (LEGAT), A., 1199.
- Azides, explosion spectra of (PETRIKALN), A., 774.
comparison of the physical properties of cyanates and (CRANSTON and LIVINGSTONE), A., 458.
- Azidoacetylbenzene, 4-hydroxy- (FRIES and SAFTIEN), A., 849.
- Azidocarbon disulphide, experiments with (BROWNE and v. HAZMBURG), A., 1130.
- 2-Azidocoumaran-3-one (FRIES and SAFTIEN), A., 849.
- 2-Azido-6-methoxycoumaran-3-one, 5-bromo- (FRIES and SAFTIEN), A., 849.
- Azidothiocarbonic acid (BROWNE and SMITH), A., 39.
- Azimethines, fission of, by means of mercuric chloride (SACHS, DRESSLER, and SMIRZITZ), A., 392.
- Azines, synthesis of (GUHA and DE), A., 743.
catalytic hydrogenation of (TAIPALE), A., 157.
- Azobenzene, equilibria of, with acids (KREMANN and ZECHNER), A., 394.
reduction of, with magnesium organohalides (GILMAN and ADAMS), A., 947.
hydrochloride, reaction between phenol and (PUMMERER and DALLY), A., 1133.
- Azobenzene, *o*-amino-, action of peracetic acid on (CHARRIER, CRIPPA, and DANSI), A., 848.
5:5'-dichloro-2:4:2':4'-tetranitro- (MÜLLER and ZIMMERMANN), A., 163.
- Azobenzenes, equilibria of, with aromatic nitro-compounds (GUHA and REGGIANI), A., 61.
- Azobenzthiazole, 1-amino-, and its hydrochloride (HUNTER), A., 850.
- Azoisobutane (TAIPALE), A., 157.
- Azo-compounds, reduction of, to hydrazo-compounds (BROWN, HENKE, and NEWPORT CO.), (P.), B., 816.
manufacture of condensation products of phenols and their ethers with (PUMMERER), (P.), B., 817.
- Azo-compounds, *o*-amino-, transformation of, into triazoles (CRIPPA; CHARRIER and BERETTA), A., 307.
- Azodisulphonic acid, potassium salt (KONRAD and PELLEN), A., 370.
- Azo-dyes (BRITISH DYESTUFFS CORP., SAUNDERS, and GOODWIN), (P.), B., 7; (SOC. CHEM. IND. IN BASLE), (P.), B., 8*, 43, 234, 480*, 1007*; (FARBENFABR. VORM. BAYER & CO.), (P.), B., 8*, 432; (CHEM. FABR. ROHNER), (P.), B., 149, 234; (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 150*; (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 233, 432; (BRITISH DYESTUFFS CORP. and SAUNDERS), (P.), B., 233; (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 626*, 866; (DUISBERG, HENTRICH, ZEH, and GRASSELLI DYESTUFF CORP.), (P.), B., 781*.
and intermediate products (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 432; (HIGGINS), (P.), B., 910*.
for manufacture of disazo- and polyazo-dyes (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 703.
manufacture of (SOC. CHEM. IND. IN BASLE), (P.), B., 265; (FARBENFABR. VORM. BAYER & CO.), (P.), B., 657, 734; (BADISCHE ANILIN- & SODA-FABRIK), (P.), B., 736*; (A.-G. F. ANILIN-FABR.), (P.), B., 816.
from *o*-aminobenzaldehyde (I. G. FARBENIND.), (P.), B., 866.
from aminotriarylmethanes (BRITISH DYESTUFFS CORP. and SAUNDERS), (P.), B., 866.
from barbituric acids (SOC. CHEM. IND. IN BASLE), (P.), B., 910.
- Azo-dyes from dibenzidinothiocarbamide (PINTO), B., 43.
from H-acid and acetyl-H-acid, comparison of (LEWERS and LOWY), B., 85.
reduction of (CONANT and PRATT), A., 1134.
identification of naphthalenoid reduction products of (FORSTER and HANSON), B., 909.
developing salts for (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 318.
positional influence of methylthiol- and methoxy-groups, and chlorine on colours of (HODGSON), B., 625*.
influence of sulphur on the colour of (PALMER and REID), A., 514.
containing a diphenylcarbamide nucleus (WENKER and NAT. ANILINE & CHEMICAL CO.), (P.), B., 866.
containing sulphonic, carboxylic, arsenic, and stibinic acid groups, comparison of affinity of cotton, wool, and cellulose acetate silk for (HALL and AISOHE), B., 270.
stable in steam from nitrosamine colours (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 318.
for cellulose acetate (BADISCHE ANILIN- & SODA-FABR.; FARB. v. BAYER & CO.), (P.), B., 536.
for wool (BRITISH DYESTUFFS CORP., BADDILEY, HILL, and RILEY), (P.), B., 85.
dyeing wool fast to milling (BADDILEY, HILL, RILEY, and BRITISH DYESTUFFS CORP.), (P.), B., 910*; (SOC. CHEM. IND. IN BASLE), (P.), B., 480*, 659*, 702.
containing chromium (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 233, 702.
containing metals (SOC. CHEM. IND. IN BASLE), (P.), B., 659*.
containing sulphur (I. G. FARBENIND.), (P.), B., 781.
containing zinc (SOC. CHEM. IND. IN BASLE), (P.), B., 576, 737*.
blue, for wool or silk (NEY and HAEBLER), (P.), B., 658.
chromed, manufacture of (SOC. CHEM. IND. IN BASLE), (P.), B., 910.
- diazotisable, manufacture of, and intermediate products (CHEM. WORKS, formerly SANDOZ, and BÖNIGER), (P.), B., 657.
- green, manufacture of (A.-G. F. ANILIN-FABR.), (P.), B., 735.
substantive (A.-G. F. ANILIN-FABR.), (P.), B., 432.
- insoluble (CASSELLA & CO.), (P.), B., 44; (FARB. VORM. BAYER & CO.), (P.), B., 703*.
constitution of products used for production of (ROWE and LEVIN), B., 6, 310.
improvement of fastness to light of, on the fibre (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 318.
- pigment, production of, on vegetable fibres (CASSELLA & CO.), (P.), B., 536.
- triarylmethane, containing chromium (SOC. CHEM. IND. IN BASLE), (P.), B., 8*.
- yellow (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 656; (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 658; (I. G. FARBENIND.), (P.), B., 816.
- yellowish-red (WAGNER, FUNKE, and GRASSELLI DYESTUFF CORP.), (P.), B., 910.
- Azo-dyes, *o*-hydroxy- (AKT.-GES. F. ANILIN-FABR.), (P.), B., 7, 86*; (SOC. CHEM. IND. IN BASLE), (P.), B., 234.
- Azodicarboxymethylamide (COOPER and INGOLD), A., 1028.
- Azoimide (*hydrazoic acid*; *hydronitric acid*), nature of (BROWNE and WILCOXON), A., 487.
decomposition of, in benzene and *p*-xylene (BERTHO), A., 508.
action of, on aromatic hydrocarbons (CURTIUS and BERTHO), A., 1152.
derivatives of (KORCZYŃSKI and NAMYSLOVSKI), A., 164.
- Azoimide, chloro-, light emission in decomposition of (GLEU), A., 992.
- Azoles, synthesis of (GUHA and DE), A., 743.
- Azomethanesulphonic acid, potassium salt (RASCHIG and PRAHL), A., 940.
- 2:2'-Azonaphthalene, 4:4'-dinitro- (MÜLLER and WEISBROD), A., 163.
- Azotobacter*, distribution of, in soils in relation to the reaction and the content of calcium carbonate and phosphoric acid (NIKLAS, POSCHENRIEDER, and HOOK), B., 377.
- Azotobacter agile* (KOSTYTSCHEV, RYSKALTSCHUK, and SCHWEZOWA), A., 869.
- 3:3'-Azotoluene, 2-hydroxy- (CUMMING and FERRIER), A., 162.
- Azoxines (GOLDSTEIN and RADAVANOVITCH), A., 1159.
- Azoxine dyes, synthesis of (KEHRMANN, GRILLET, and BORGEAUD), A., 1262.
absorption spectra of (KEHRMANN and BORGEAUD), A., 1080.

Azoxybenzene, equilibria of, with aromatic nitro-compounds (GIUA and GUASTELLA), A., 61.
 Azoxybenzene, 3:3':4:4'-tetrachloro- (KRAAY), A., 1034.
 Azoxy-compounds, reactions of (CUMMING and FERRIER), A., 162.
 relation of diazo-hydrates to (ANGELI), A., 947.
 Azoxy-mesitylene (BAMBERGER, ORMEROD, and REBER), A., 514.
 Azulenes (RUZICKA and RUDOLPH), A., 299.

B.

Babingtonite, composition of (GOSSNER), A., 595.
 Bacilli of the colon-aerogenes group, utilisation of organic acids by (KOSER), A., 1178.
 Friedländer, specific substance from (HEIDELBERGER, GOEBEL, and AVERY), A., 545.
 lactic acid, toxicity of potassium chloride on (BACHRACH), A., 643.
 tubercle, proteins of (COGHILL), A., 1277.
 typhoid, action of, on milk (GORINI), A., 1278.
Bacillus acidophilus and *bulgaricus*, effect of insulin on (KENDALL and ISHIKAWA), A., 868.
Bacillus amylobacter and *felsineus*, retting of flax with (RUSCHMANN and BAVENDAMM), B., 8.
Bacillus coli aerogenes, in soils (KOSER), B., 694.
 differentiation of, by means of quinic acid (BUTCHER), B., 390.
 differentiation of, in examination of water (HINMAN), B., 78.
Bacillus coli communis, effect of electrolytes on the viability and electrophoretic migration of (SHAUGHNESSY and CRISWELL), A., 203.
 Endo's medium for (HARRIS), B., 78.
 respiration and glycolysis with (RONA and NICOLAI), A., 868.
 action of, on cytosine and uracil (HAHN and SCHÄFER), A., 203, 1062.
 detection of, in water (DUNHAM, MCCRADY, and JORDAN), B., 302.
Bacillus macerans, fermentation by (MOSKOVITS), (P.), B., 509.
Bacillus megatherium and *tumescens*, formation of carbamide by (IVANOV), A., 1062.
Bacillus mesentericus and *subtilis*, action of, on cellulose (THAYSEN and BUNKER), B., 817.
Bacillus pestis, action of, on carbohydrates (PONS), A., 97.
Bacillus prodigiosus, effect of X-rays on (TRILLAT), B., 998.
Bacillus proteus, proteolytic enzyme of (KENDALL and KEITH), A., 1062.
Bacillus pyocyaneus, growth of (ACKLIN), A., 203.
 red water-soluble pigment from (MEADER, ROBINSON, and LEONARD), A., 1062.
Bacillus sporogenes, effect of oxygen on (QUASTEL and STEPHENSON), A., 1177.
Bacillus tuberculosis, peptone culture medium for (BOEZ), A., 1062.
 Bacteria, effect of polarised light on growth of (BHATNAGAR and LAL), A., 435.
 effect of electrolytes on electrophoretic migration of (WINSLOW and FLEESON), A., 324.
 content of, in air (LURGI APPARATEBAU-Ges.), (P.), B., 222.
 chemistry of (COGHILL), A., 1277.
 end-products of fermentation by (KAY), A., 643.
 formation of acetic acid by (NEUBERG and WINDISCH), A., 324.
 formation of carbamide by (IVANOV), A., 1062.
 effect of cyanides on growth of (LÖFFLER and RIGLER), A., 869.
 oxidation of glycerol by (VIRTANEN and BÄRLUND), A., 545.
 lipochromes in (READER), A., 204.
 heat-stable peroxydase from (CALLOW), A., 643.
 oxidation of sulphur by (GUITTONNEAU), A., 545.
 formation of urease by (RUBENTSCHIK), A., 1178.
 formation of uric acid by (MCDONALD, LEVINE, and GLEASON), A., 1277.
 metabolism of (KENDALL and KEITH; KENDALL, DAY, and WALKER), A., 1062.
 chemotherapy with infections of (RAIZISS, SEVERAC, and MOETSCH; WALKER and SWEENEY), A., 320.
 acid-fast, metabolism of (KONDO), A., 96.
 anaerobic (QUASTEL and STEPHENSON), A., 1177.
 spore-bearing, production of hydrogen sulphide by (KAHN), A., 435.
 aroma-producing, improvement of molasses as nutrient medium for (NITSCHKE), (P.), B., 171.

Bacteria, lactic acid, action of (NEUBERG and GORR), A., 97, 325, 868; (PEDERSON, PETERSON and FRED), A., 759; (v. EULER and NILSSON; VIRTANEN and KARSTRÖM), A., 868.
 enzymes of (NILSSON and SANDBERG), A., 978.
 fermentation by (VIRTANEN, KARSTRÖM, and BÄCK), A., 435.
 effect of, on acetone-butyl alcohol fermentation (FRED, PETERSON, and MULVANIA), A., 1177.
 protective action of milk yeasts on (SLOBODSKA-ZAYKOVSKA), A., 545.
 nitrogen-fixing, effect of metallic aluminium on (TRUFFAUT and BEZSSONOFF), A., 545.
 in soils (VINOGRADSKI), B., 684.
 resting, dehydrogenation by (QUASTEL), A., 434.
 synthesis of L-aspartic acid by (QUASTEL and WOLF), A., 868.
 soil, losses of nitrogen caused by (LEMOIGNE and DOPFER), A., 979.
 sugar-inverting, and their industrial application (MEZZADROLI), B., 210.
 sulphur, calcium carbonate in (BERSA), A., 1277.
 thermophilic, fermentation of cellulose by (VILJOEN, FRED, and PETERSON), A., 325.
 Yoghurt, in tablet form (SCHEERMESSER), B., 508.
 determination of, gravimetrically (COOMBS and STEPHENSON), A., 1284.
 determination of enzymes in (VIRTANEN and KARSTRÖM), A., 96.
 determination of catalase and peroxydase in (KIRCHNER and NADEL), A., 979.
 determination of volatile fatty acids in (VIRTANEN), A., 764.
 Bactericidal action of nitroso-compounds (COOPER and FORSTNER), B., 518.
 of cyclotelluropentanediols and their derivatives (MORGAN, COOPER, and RAWSON), B., 518.
 Bactericides, manufacture of (BRITISH DYESTUFFS CORP., PERKIN, and BURGER), (P.), B., 420.
 from sulphite-cellulose waste lye (SCHLUMBERGER), (P.), B., 694.
 Bacteriophage, significance of, in surface water (ARNOLD), B., 469.
Bacterium ascendens, action of, on aldol (BINDER-KOTRBA), A., 1062.
 action of, on phenylglyoxal (MAYER), A., 1062.
Bacterium xylinum, fermentation of α -ketoglutaric acid by (IWATSURU), A., 435.
Baeckea gunniana, essential oil of (PENFOLD), B., 804.
 Baeyer strain theory, modification of (SHORT), A., 1028.
 Bagasse, fermentation of, in relation to yield of alcohol (OWEN and BENNETT), B., 962.
 treatment of, for manufacture of fibre board (MUNROE), (P.), B., 401.
 Bakeries, recovery of ethyl alcohol in (ANDRUSIANI), (P.), B., 766.
 Baking of cereals (MAROTTA), B., 992.
 Baking-powder (JONES), (P.), B., 74; (BOEHRINGER SOHN and RAHN), (P.), B., 297.
 Balance for adsorption (McBAIN and BAKR), A., 493.
 deflexion, modified (TREVAN), A., 706.
 density, determination of density of gases with (STOCK and RITTER), A., 669.
 mercury, for measuring the bulk volume of bricks (WESTMAN), B., 632.
 micro-. See Micro-balance.
 Ball mills. See under Grinding and Mills.
 Bamboo, constituents of (AZAMI and SENGOKU), B., 8.
 extraction of cellulose from (FESTER and MAIDANA), B., 267.
 gases in stems of (GAERLAN), A., 981.
 Banana fibre (BISHOP), B., 266.
 Barbituric acid, dibromo-, preparation of (PARKE DAVIS & Co. and CLOVER), (P.), B., 173.
 Barbituric acids, derivatives of (URSUM, SCHÜTZ, TAUB, and WINTHROP CHEMICAL Co.), (P.), B., 609.
 picric acid reaction of (DOX), A., 180.
 Barbituric acids, bromo- and chloro-, hydrazides of (MACBETH, NUNAN, and TRAILL), A., 846.
 Barium alloys with mercury, free energy and heat of transfer of barium in (ANDERSON), A., 1102.
 Barium salts, preparation of (RHENANIA VEREIN CHEM. FABR. A.-G., RÜSBERG, and KLUG), (P.), B., 52; (EPHRAIM), (P.), B., 53.
 pure (RAQUET), B., 629.
 separation of radium salts and (BACHILOV), (P.), B., 538.

- Barium aluminates** (MALQUORI), A., 810.
chloroaluminate (*phosgeno-aluminate*) (GERMANN and BIROSEL), A., 35.
 bromide, activity coefficients and transport numbers of (GELBACH and HUPPKE), A., 796.
 carbonate, influence of added substances on fixation of nitrogen by mixtures of carbon and (ASKENASY and BRING), B., 978.
 commercial, removal of sulphur from (RHENANIA VEREIN CHEM. FABR., MARWEDEL and LOOSER), (P.), B., 630.
 sols, constitution of (v. BURZAGH), A., 1096.
 chloride, manufacture of (JAHL and MICHAEL & Co.), (P.), B., 822.
 simultaneous preparation of sulphur chloride and (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 53.
 adsorption of, by colloidal hydrated manganese dioxide (CHLOPIN and BALANDIN), A., 119.
 equilibrium of magnesium and potassium chlorides with (VALENTIN), B., 634.
 and nitrate, equilibria of sodium chloride and nitrate with (FINDLAY and CRUICKSHANK), A., 358.
 detection of, in calcium chloride (RICHARD), B., 786.
 separation of, from solutions (RHENANIA VEREIN CHEM. FABR. and RÜSBERG), (P.), B., 788, 915.
 hydroxide, pure, production of (RHENANIA VEREIN CHEM. FABR. and STUER), (P.), B., 946.
 production of, from barium sulphide (JAHL), (P.), B., 438.
 and oxide, production of (HILL and BLAYDON MANURE & ALKALI Co.), (P.), 1013.
 iodide, solubility of, in water (PACKER and RIVETT), A., 682.
 manganate, preparation of (WILSON, PARSONS, and CHRISTHOLM), (P.), B., 743.
 nitrate, manufacture of (TYRER), (P.), B., 439.
 equilibrium of, with lead and potassium nitrates and water (GLASSTONE and RIGGS), A., 126.
 oxide, production of, of high porosity and purity (SCHULZE), (P.), B., 915.
 melting point of (SCHUMACHER), A., 340.
 equilibrium of arsenic pentoxide, water, and (HENDRICKS), A., 358.
 reduction of heavy metal sulphides by (BILTZ and v. MÜHLENDAHL), A., 136.
peroxide, manufacture of (MEYERHOFER), (P.), B., 539, 666.
 treatment of, to obtain hydrogen peroxide, and an improved *blanc fixe* (WEBER, LAPORTE, LTD., and ALCOCK), (P.), B., 666.
 silicates, purification of (DEGUIDE), (P.), B., 788.
 sulphate, purification of (ACKERMANN), (P.), B., 321.
 as a protection against X-rays (HUNT), A., 706.
 surface tension of crystals of (BALAREV), A., 790.
 mixed crystals of, with potassium and sodium manganates (BALAREV), A., 1195.
 adsorption of ions by mixture of aluminium hydroxide and (MEIROTRA and DHAR), A., 1091.
 influence of citrates on precipitation of (NICHOLS and THIES), A., 345.
 action of silica on (MARCHAL), B., 51.
 conversion of, into other barium compounds (ROTHER and BRENEK), (P.), B., 787.
 compound of sulphuric acid and (KRAUSS), A., 368.
 See also Barytes, *Blanc fixe*, and Heavy spar.
 sulphide, crude, extraction of (KIRCHHEISEN), (P.), B., 13.
 manufacture of (DEGUIDE), (P.), B., 156; (RICHARDSON), (P.), B., 788; (HIRSCHEL), B., 978.
 decomposition of (RHENANIA VEREIN CHEM. FABR. and RÜSBERG), (P.), B., 322, 822.
 dithionate, solubility of (ISHIKAWA and KIMURA), A., 237.
 vanadate (EPHRAIM and BECK), A., 371.
Barium organic compounds :—
 Barium alkyl and aryl phosphates (ZETTSCHKE and NACHMANN), A., 46.
 saccharate, decomposition of (SCHEERMESSEER), (P.), B., 561.
Barium determination and separation :—
 water-soluble, determination of, in black ash (MEISTER and STEPHENS), B., 820.
 separation of radium and (BASHILOV), (P.), B., 742.
Barley. See under Trees.
 influence of soil, season, and manuring on (LANCASTER), B., 103.
 tolerance of alkali salts in soil by (NEIDIG and MAGNUSON), B., 24.
Barley, effect of potassium chlorate on germination of (STROBEL and SCHARRER), A., 1066.
 composition and digestibility of, and its milling offals (HONCAMP and SCHRAMM), B., 643.
 food value of different grades of, as produced by purification plants (HONCAMP and SCHRAMM), B., 643.
 evaluation of, for distillery purposes (HASTIE), B., 844.
 malt, enzymes of (PRINGSHEIM and BEISER), A., 976.
 maltase of (LEIBOWITZ), A., 322.
 proteins, changes in degree of dispersion of, during malting, mashing, and fermentation (WINDISCH, KOLBACH, and WENTZELL), B., 170.
 determination of diastatic power of (HIND, THREADGOLD, and ARNOLD), B., 170.
Baru bark fibre (BISHOP), B., 266.
Barytes, structure of (JAMES and WOOD), A., 13.
 from the Giona mine (RUZ), A., 595.
Basalt, tilting furnace for fusion of (DULÉ), (P.), B., 129.
Base, $C_8H_5O_3N_3$, and its salts and derivatives, from hydrolysis of proteins of castor bean and oats (SCHRYVER and BUSTON), A., 1049.
 $C_{11}H_{23}N_3$, from piperazinedipiperidinium bromide and ammonia (v. BRAUN, GOLL, and ZOBEL), A., 740.
 $C_{12}H_{19}ON$, and its derivatives, from reduction of $C_{18}H_{22}O_2N_2$ (BANFIELD and KENYON), A., 828.
 $C_{22}H_{41}N_2$, and its salts, from concessio dimethosulphate (KANGA, AYYAR, and SIMONSEN), A., 1047.
Bases, definition of (BRÖNSTED), A., 797.
 cyclic, stability of (v. BRAUN, GOLL, and ZOBEL), A., 739; (v. BRAUN and ZOBEL), A., 1150.
 hydrogenated, oxidation of (KARRER and WIDMER), A., 1150.
 dicyclic, preparation of (RIEDEL), (P.), B., 513.
 heterocyclic, reactive methyl groups in (HUMPHRIES), A., 414.
 organic, behaviour of, with acids, in non-aqueous solutions (HÖLZL), A., 1206.
 action of, on metallic salts (FISCHER), A., 492.
 action of *s*-tetrabromoethane on (FULTON), A., 304.
 weak, dissociation constants of (DHAR), A., 796.
 determination of, volumetrically, with sodium borate (RASMUSSEN and CHRISTENSEN), A., 1221.
Base-exchanging materials (INTERNAT. FILTER Co.), (P.), B., 470*.
 natural, treatment of (HIGGINS), (P.), B., 174.
 minerals, treatment of (HIGGINS and UNITED WATER SOFTENERS), (P.), B., 614*.
Bassia longifolia, mohua cake from seeds of, as fertiliser (REGE), B., 335.
Bates, manufacture of, from paneroas (LEPETIT), (P.), B., 839.
Bating, rôle of enzymes in (WILSON and MERRILL), B., 290.
 activities of pancreatic enzymes used in (WILSON and MERRILL), B., 290.
 materials, measurement of enzyme activities of (WILSON and MERRILL), B., 205.
 determination of the proteolytic power of (CHIESA), B., 715.
Batteries, depolarising agent for (EDISON and EDISON, INC.), (P.), B., 986.
 exhausted primary, utilisation of (CHEM. FABR. JOHANNISTHAL and SCHELLER), (P.), B., 794.
 galvanic (OFFENHEIM and SOC. ANON. LE CARBONE), (P.), B., 677*.
 secondary, electrolyte for (HOWLAND), (P.), B., 986.
 storage, plates for (DOWNER), (P.), B., 922.
 lead amalgams for (MILLER), (P.), B., 677*.
Baty alcohol, and its diphtalic ester acid (WEIDEMANN), A., 980.
Bauxites, removal of iron from (FLEISSNER), (P.), B., 917.
Beans, adzuki, proteins of (TAKAHASHI and ITAGAKI), A., 1066.
 castor. See Castor beans.
 soya. See Soya beans.
 velvet, vitamin content of (SALMON and MILLER), A., 437.
 white, toxicity of (LÜNING and BARTELS), B., 606.
Bearing metals. See under Alloys.
Beckmann transformation (JONES and WALLIS), A., 279; (MEISENHEIMER, ZIMMERMANN, and v. KUMMER), A., 405; (YAMAGUCHI), A., 616; (GASTALDI, LONGIAYE, and SIRCANA), A., 1247.
Beech, migration of nitrogen compounds in autumn leaves of (COMBES), A., 761.
 red. See *Fagus sylvatica*.
Beech wood, hemicelluloses of (O'DWYER), A., 983.
Beef, composition of (CHATFIELD), B., 1027.
 effect of cold storage on (CLIFFORD), B., 252.

- Beef, vitamin-A in** (HOAGLAND and SNIDER), A., 206.
 juices, freezing of (VICKERY), B., 765.
 tallow, artificial (HIROSE), B., 887.
- Beer, production of** (ZISELSBERGER), (P.), B., 211.
 formation and measurement of foam on (GEYS), B., 961.
 application of stream-line filter to brewing and bottling of (HIND and PICKARD), B., 380.
 influence of brewing water on acidity of (WINDISCH and KOLBACH), B., 962.
 influence of hop constituents on head-formation in (WINDISCH, KOLBACH, and BANHOLZER), B., 687.
 percentage of alcohol in (SLATOR), B., 844.
 modification of malt in relation to stability of (MORITZ and FULLER), B., 602.
 pasteurisation of (LASSEN), (P.), B., 381*.
 refrigeration of (COOK, LOVE, VICKERY, and YOUNG), B., 601.
 colour changes of, during primary fermentation (WANDERSCHIECK), B., 929.
 and beer worts, buffer substances in (KOLBACH), B., 603, 686.
 and beer worts, nitrogen content of (SMITH), B., 602.
 non-alcoholic, manufacture of (MEYER), (P.), B., 800.
 sound, importance of oxygen in production of (HERON), B., 603.
 determination of colour of (MESTAN), B., 962.
- Beer wort, production of** (AKTIEBOLAGET SEPARATOR), (P.), B., 251; (CAMPBELL), (P.), B., 509*.
 boiling of, under pressure (PETIT and RAUX), B., 417.
- Beeswax.** See under Wax.
- Beet diffusion juice, purification of** (SCHREIBER), B., 894.
 juice, coloration of, during evaporation (STANEK and VONDRAK), B., 961.
 molasses. See under Molasses.
 sugar. See under Sugar.
- Beetroot, concentric coloured rings in** (BHATNAGAR and SENGAL), A., 904.
 extraction apparatus for (SINGER), (P.), B., 209.
 effect of moisture on loss of sugar in storage of (PACK), B., 960.
 sugar, activation of amylase of, by ions (DOBY and HIBBARD), A., 1182.
 effect of applications of sodium nitrate on (SOUCEK), B., 893.
 silage from tops of (WOODMAN and AMOS), B., 895.
 determination of loss of polarisation in analysis of (STANEK and VONDRAK), B., 560.
- Behenic acid, sodium salt, stability of solutions of** (LAING), A., 241.
- Behenic acid, bromoiodo- and iodohydroxy-, calcium salts** (HOLDE and GORGAS), A., 269.
- Behenolic acid, crystallisation of** (MÜLLER), A., 665.
 hydrogenation of (GONZÁLEZ), A., 712.
- Behenone.** See Tritetracontanone.
- Beidellite (LARSEN and WHERRY; ROSS and SHANNON), A., 143.**
- Bells, church, steel-like alloy for** (LANGE and STEINEL), (P.), B., 444.
- Belladonna, sucrose in roots of** (ROSENTHALER), A., 210.
 leaves, assay of (CARNES and EVERS), B., 801.
- Belladonna alkaloids, extraction of solutions of** (WATKINS and PALKIN), B., 963.
- Bementite, identity of ectropite with** (LARSEN), A., 709.
- Bentonite, minerals of, and their physical properties** (ROSS and SHANNON), B., 361.
- Benzaldehyde, preparation of, from toluene** (MEIGS and ELLIS-FOSTER Co.), (P.), B., 77.
 oxidation of, with atmospheric oxygen (JORISSEN and VAN DER BEEK), A., 519.
 action of, with chloroacetic acid, and potassium cyanide (HEUZE), A., 961.
 action of, on cyclic ketones (CORNUBERT and BORREL), A., 953.
 reaction of methyl *n*-propyl ketone with (NEUBERG and GORR), A., 272.
 action of sodamide on (KASIWAGI), A., 728.
 compounds of cyclohexanone with (VÖRLANDER and KUNZE), A., 1144.
 hydrazones of (VOROČEK, ETEEL, and KOPPOVA), A., 501.
 benzoylhydrazone, *o*-chloro- and 2-chloro-5-nitro- (MEISENHEIMER and SENN), A., 415.
 phenylhydrazone, *o*-amino-, and its acetyl derivative (SEIDEL), A., 1141.
 phenylhydrazones, isomeric (BODFORSS), A., 613.
 5-chloro-2,4-dinitrophenylhydrazone (MÜLLER and ZIMMERMANN), A., 163.
- Benzaldehyde 3:5-dichloro-6-nitrophenylhydrazone** (MÜLLER and HOFFMANN), A., 163.
 determination of chlorine in (WAGNER), B., 75.
- Benzaldehyde, *o*-amino-, 2:4-dinitrophenylhydrazone, and its hydrochloride** (SEIDEL), A., 1141.
 azo-dyes from (I. G. FARBENIND.), (P.), B., 866.
o-bromo-, *p*'-nitrophenylhydrazone (KALB and GROSS), A., 614.
p-bromo- and *p*-chloro-, and their nitro-derivatives (VAN DER LEE), A., 519.
 bromonitro- and chloronitro-derivatives, substituted phenylhydrazones of (CHATTAWAY and WALKER), A., 169.
o-chloro-, *p*-nitrophenylhydrazone (ZETSCHE and ZALA), A., 614.
 2:3:5-trichloro- (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 577.
 2-chloro-*m*-amino- and chloro-*m*-hydroxy-derivatives, and their derivatives (HODGSON and BEARD), A., 292.
 2-chloro-3-hydroxy- and chloronitrohydroxy-derivatives (BRITISH DYE STUFFS CORP. and HODGSON), (P.), B., 973.
 chloronitro-3-hydroxy-, chlorodinitro-3-hydroxy-, dichloronitro-3-hydroxy-, and their derivatives (HODGSON and BEARD), A., 1039.
o- and *m*-hydroxy-, formation of, from nitration product of benzaldehyde (HODGSON and BEARD), B., 511.
 2:3:4-trihydroxy-, and its phenylhydrazone, antimonyl compounds of (CHRISTIANSEN), A., 722.
o-nitro-, and its condensation products, photochemical reactions of (TANASESCU), A., 1247.
 3:5-dinitro-4-amino- (DE LANGE), A., 278.
- Benzaldehydes, *m*-hydroxy-, amino-, and nitro-derivatives, influence of position of amino- and nitro-groups on reactivity of** (TRÖGER and FROMM), A., 68.
polyhydroxy-, reduction of (ROSEN MUND and BOEHM), A., 1136.
 fluoro-, and their derivatives (SHOESMITH, SOSSON, and SLATER), A., 1247.
- Benzaldoxime, 5-nitro-2-hydroxy-** (MEISENHEIMER, ZIMMERMANN, and v. KUMMER), A., 406.
- β -Benzaldoxime, *o*-nitro-, acetyl derivative** (BRADY and McHUGH), A., 69.
- α -Benzaldoximes, nitro-, benzoyl derivatives** (BRADY and McHUGH), A., 69.
- α - and β -Benzaldoximes, bromo-, chloro-, and iodo-, and their salts and derivatives** (BRADY, COSSON, and ROPER), A., 69.
- Benzalizerin methyl ether, and its acetyl derivative** (MILLER and PERKIN), A., 174.
- isobenzalizerin, and its derivatives** (MILLER and PERKIN), A., 174.
- Benzamide, conductivity of solutions of, in bromine** (FINKELSTEIN), A., 682.
- Benzamidines, nitration of** (FORSYTH, NIMKAR, and PYMAN), A., 611.
- Benzanilide, 2-chloro-5-nitro-** (MEISENHEIMER, ZIMMERMANN, and v. KUMMER), A., 405.
- Benzanthrone, sublimation of** (LYFORD and NAT. ANILINE & CHEMICAL Co.), (P.), B., 817.
 catalytic hydrogenation of (v. BRAUN and BAYER), A., 172.
 4-thio-*p*-tolyl ether (BADISCHE ANILIN- & SODA-FABRIK, and FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 868.
 derivatives, manufacture of (BADISCHE ANILIN- & SODA-FABRIK), (P.), B., 86* ; (CASSELLA & Co.), (P.), B., 434 ; (BRIT. ALIZARINE Co., LTD., ANDERSON, and DAWSON), (P.), B., 658 ; (RANSFORD and CASSELLA & Co.), (P.), B., 659* ; (KALISCHER, MÜLLER, and FRISTER), (P.), B., 735.
 containing sulphur (I. G. FARBENIND.), (P.), B., 867.
- Benzanthrone, 1:4'-diamino-** (CASSELLA & Co.), (P.), B., 434.
 4:4'-dichloro- (KALISCHER, MÜLLER, and FRISTER), (P.), B., 735.
 chloroamino-, chlorohydroxy-, and chloronitro- (THOMSON, THOMAS, SCOTTISH DYES, LTD.), (P.), B., 868.
- Benzanthrone dyes** (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING ; BADISCHE ANILIN- & SODA-FABRIK), (P.), B., 148 ; (KALLE & Co.), (P.), B., 149.
 and intermediates (THOMPSON, THOMAS, and SCOTTISH DYES), (P.), B., 576.
 manufacture of intermediates for (BADISCHE ANILIN- & SODA-FABRIK and FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 867.
 vat, manufacture of (BADISCHE ANILIN- & SODA-FABRIK), (P.), B., 266* , 434* , 626* ; (KRÄNZLEIN, GREUNE, SEDLMAYR, VOLLMANN, and GRASSELLI DYE STUFF CORP.), (P.), B., 625.

- Benzanthrone-3-sulphinic acid** (I. G. FARBERIND.), (P.), B., 867.
- Benzanthrone-3-sulphide** (BADISCHE ANILIN- & SODA-FABRIK and FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 867.
- Benzaurin**, absorption spectra of (ORNDORFF, GIBBS, and McNULTY), A., 60.
- 1:4-Benzodithian-2:3-dione** (HURTLEY and SMILES), A., 1150.
- 1:3-Benzodithiole, 2-oximino-, and 2-thio-** (HURTLEY and SMILES), A., 948.
- 1:3-Benzodithiol-2-one, and nitro-** (HURTLEY and SMILES), A., 948.
- 1:3-Benzodithylium salts** (HURTLEY and SMILES), A., 1150.
- Benzene**, structure of (PAULING), A., 662.
- crystal structure of (BROOMÉ), A., 665.
- nucleus, displacement of atoms and groups in (DE LANGE), A., 278.
- formation of rings attached to (TITLEY), A., 512.
- orientation in (LEVINE), A., 516, 1244.
- substitution in (DIMROTH), A., 312; (FRANCIS, ANDREWS, and JOHNSTON; FRANCIS), A., 828.
- with reference to theory of alternate polarities (OLIVIER and BERGER), A., 1239.
- mercuration in relation to (COFFEY), A., 629.
- influence of nitro-groups on reactivity of substituents in (KENNER, TOD, and WITHAM), A., 58.
- photo-luminescence of, and its derivatives (RIEMANN), A., 660.
- density and refractive index of mixtures of ethyl alcohol, water, and (BARBAUDY), A., 464.
- density and refractive index of mixtures of methyl alcohol, water, and (BARBAUDY), A., 671.
- vapour, action of α -particles on (MUND and BOOAEERT), A., 508.
- electrical conductivity in (JAKUBSOHN), A., 29.
- molecules, electric moment of (SÄNGER), A., 456.
- and nitro-, dielectric constants of (NAYDER), A., 225.
- dielectric constants in solutions of (PARTINGTON and RULE), A., 661.
- freezing points of mixtures of, with acetone and with ether (YAMAMURA), A., 1208.
- interfacial tension between aqueous sodium oleate solutions and (HARKINS and ZOLLMAN), A., 239.
- colloidal solutions in (HAUROWITZ), A., 1202.
- adsorption by charcoal of mixtures of, with acetone and with alcohol (TRYBORN and WYATT), A., 19, 346.
- adsorption at interfaces between soap solutions and (DUBRISAY), A., 672.
- equilibrium of ethyl alcohol, water, and (BARBAUDY), A., 357.
- equilibrium of sulphur dioxide with (MAZZETTI and DE CARLI), A., 944.
- physical properties of mixtures of toluene and (MITSUKURI and NAKATSUCHI), A., 356.
- distillation of mixtures of toluene, water, and (BARBAUDY), A., 578.
- equilibrium of urethane and (PUSHIN), A., 245.
- fusion curves of mixtures of *m*-xylene and (NAKATSUCHI), A., 682.
- electrochemical bromination and chlorination of (CROCO and LOWY), A., 1111.
- action of allyl alcohol on, in presence of aluminium chloride (HUSTON and SAGER), A., 944.
- action of benzoyl peroxide on, in presence of metallic chlorides (BÖESEKEN and REYNHART), A., 1037.
- additive compound of mandelic acid and (ZAHN), A., 65.
- action of sulphuryl azide on (SCHMIDT), A., 56.
- and its derivatives, effect of, on sulphur metabolism (CALLOW and HELE), A., 862.
- recovery of (FRÉCHOU), (P.), B., 147.
- commercial, purification of (SCHLESISCHES KOHLENFORSCHUNGS-INST.), (P.), B., 479.
- crude, purification of (OBERSCHLESISCHE KOKSWEBKE & CHEM. FABR., and RUSSIG), (P.), B., 576.
- treatment of (SCHLAMP), (P.), B., 814.
- treatment of waste acid from refining of (MENZEN), (P.), B., 527.
- thickening and valuation of wash-oil for (KATTWINKEL), B., 570.
- removal of, from gas (COMP. FABR. COMPTES ET MATÉRIEL D'USINES À GAZ), (P.), B., 524.
- derivatives, electron displacement in (LUCAS), A., 943.
- adsorption and molecular orientation at interfaces in aqueous solutions of (FRUMKIN, DONDE, and KULVARSKAYA), A., 1092.
- Benzene**, disubstituted, surface tension and density of (SUGDEN and WILKINS), A., 158.
- isomeric disubstituted, specific heats of (ANDREWS), A., 668.
- vicinal trisubstituted, substitution in (RUBENSTEIN), A., 518.
- See also Benzene and Benzol.
- Benzene, hexabromo- and hexachloro-**, crystal structure of (PLUMMER), A., 13.
- 6-bromo-4-nitro-1:2-diamino-, 6-bromo-2:4-dinitro-1-nitroso-, and 6-bromo-1:2:4-trinitro-** (BORSCHÉ and FESKE), A., 605.
- m*-bromonitro- and *m*-chloronitro-**, effect of pressure on equilibria of (PUSHIN), A., 578.
- o*-dichloro-**, action of sodium methoxide on derivatives of (KRAAY), A., 1034.
- 3:4-dichlorofluoro-, 3:4-dichloroiodo-, 2-chloro-5-iodonitro-, and 3:4-dichloronitroso-** (KRAAY), A., 1034.
- chloronitro-**, manufacture of (LIVINGSTON and KRYIDES), (P.), B., 658.
- action of alcoholic potassium hydroxide on (RICHARDSON), A., 515.
- and nitro-derivatives, action of hydrazine on (MÜLLER; MÜLLER and ZIMMERMANN; MÜLLER and HOFFMANN; MÜLLER and WEISBROD), A., 163.
- o*- and *p*-chloronitro-**, poisoning. See under Poisoning.
- separation of (VER. F. CHEM. & MET. PRODUKTION), (P.), B., 433.
- p*-chloronitro-**, phenacetin from (RICHARDSON), B., 689.
- 5-chloro-4:6-dinitro-1:3-diamino-** (BORSCHÉ and TRAUTNER), A., 390.
- 2:4:5-trichloronitro-**, action of hydrazine hydrate on (MÜLLER and HOFFMANN), A., 163.
- s*-trichloro-di- and -tri-nitro-**, action of sodium ethoxide on (VAN RIJN), A., 510.
- chlorothiol-**, and its homologues, preparation of (LEOHER and HOLSCHNEIDER), (P.), B., 386.
- dihalogen derivatives**, electric moments of (ERRERA), A., 779.
- hydroxy-derivatives**, ultra-violet absorption spectra of (KEPIANKA and MARCHEWSKI), A., 775.
- hexahydroxy-**, effect of, on conductivity of boric acid (BÖESEKEN and MEUWISSEN), A., 801.
- diiodo-**, dimagnesium derivatives of (BRUHAT and THOMAS), A., 1028.
- nitro-**, polarisation of (LOHAUS), A., 565.
- cryoscopy with (BROWN and BURY), A., 675.
- binary mixtures with (WEISSENBERGER, HENKE, and KAWENOKI), A., 787.
- mercuration of (JÜRGENS; DIMROTH), A., 312.
- determination of, volumetrically (KOLTHOFF), A., 84.
- m*-dinitro-**, dielectric constants of benzene solutions of (PARTINGTON and RULE), A., 661.
- equilibrium of naphthalene with (PUSHIN), A., 1208.
- 1:2:4:5-tetranitro-, and 4:6-dinitro-1:3-dihydroxylamino-** (BORSCHÉ and FESKE), A., 606.
- nitroso-**, compound of sodium ferropentacyanide and (CAMBI), A., 277.
- o*-dithiol-** (HURTLEY and SMILES), A., 948.
- Benzene series**, oxidation in (STEPHENS), A., 1028.
- Benzene-1-arsinic acid, diamino- and nitroamino-hydroxy-derivatives** (ÉTABL. POULENO FRÈRES), (P.), B., 899.
- s*-amino-3-chloro-4-hydroxy-, *N*-acyl derivatives of** (I. G. FARBERIND., BENDA and SCHMIDT), (P.), B., 646*.
- Benzenearsinic acids, hydroxyamino-, benzoyl derivatives** (I. G. FARBERIND. and BENDA), (P.), B., 770.
- Benzeneazo-5(or 8)-amino-1-phenylnaphthalene, *p*-nitro-** (WEISS and WOLDICH), A., 509.
- p*-Benzeneazo-*p*'*p*'-diaminotriphenylmethane, and *p*-4-hydroxy-** (DUTT), A., 830.
- Benzeneazobenzaldehyde benzylhydrazone** (BUSCH and PFEIFFER), A., 831.
- Benzeneazobenzene**, absorption spectra of (BRODE), A., 884.
- Benzeneazobenzeneazobenzeneazoaniline** (DUTT), A., 830.
- Benzeneazobenzeneazobenzeneazobenzeneazodimethylaniline** (DUTT), A., 830.
- Benzeneazobenzeneazobenzeneazobenzeneazophenol** (DUTT), A., 830.
- Benzeneazobenzeneazobenzeneazodimethylaniline** (DUTT), A., 830.
- Benzeneazobenzeneazobenzeneazophenol** (DUTT), A., 830.
- Benzene-4-azo-2:6-dimethylpyridine, *p*-chloro-** (KOENIGS, FREIGANG, LOBMAYER, and ZSCHARN), A., 413.
- Benzene-4-azo-2:6-dimethylpyridine-3-carboxylic acid nitrate, and nitro-** (KOENIGS, FREIGANG, LOBMAYER, and ZSCHARN), A., 413.

- 2-Benzeneazomethylene-1:3:3-trimethylindoline salts (ROSENHAUER and FEILNER), A., 1257.
- Benzeneazo- α -naphthaleneazo- β -naphthol, *p*-bromo-, and *m*-chloro- (TRÖGER and SCHAEFER), A., 1032.
- Benzeneazo- α -naphthaleneazoresorcinol, *p*-bromo-, and *m*-chloro- (TRÖGER and SCHAEFER), A., 1032.
- Benzeneazo- α -naphthalenediazonium chlorides, bromo-, chloro-, and nitro- (TRÖGER and SCHAEFER), A., 1032.
- Benzeneazo- α -naphthalenediazosulphonic acid, *m*- and *p*-bromo-, *m*-chloro-, and *p*-nitro-, sodium salts (TRÖGER and SCHAEFER), A., 1032.
- Benzene-1-azo-*p*-naphthaquinone-1-sulphonic acid, 4-nitro-, sodium salt (ROWE, LEVIN, BURNS, DAVIES, and TEPPER), A., 625.
- Benzeneazo- β -naphthol, 3:5-dibromo-*p*-hydroxy- (PIERONI and BUZZI), A., 285.
- Benzeneazo- α -naphthylamine, *o*- and *m*-bromo-, *o*- and *m*-chloro-, and *o*-, *m*-, and *p*-nitro- (TRÖGER and SCHAEFER), A., 1032.
- Benzeneazo- α -naphthylhydrazinesulphonic acid, *p*-bromo-, and *m*-chloro-, and their salicylaldehyde condensation products (TRÖGER and SCHAEFER), A., 1032.
- 4'-Benzeneazo-2:4-dinitrodiphenylamine, preparation of (BERTTA), B., 866.
- Benzeneazo-octahydroanthranol (v. BRAUN and BAYER), A., 173.
- Benzeneazo-octahydrophenanthrol (v. BRAUN and BAYER), A., 173.
- Benzeneazocyclopentane-2-one-1-carboxylic acid, 1:3':4':5'-triiodo-, and 1:4'-nitro-, ethyl esters (KALB, SCHWEIZER, ZELLNER, and BERTHOLD), A., 1162.
- Benzeneazophenol, absorption spectrum of, in various solvents (BRODE), A., 223.
- 3-Benzeneazo-1-phenyl-5-methyl-1:2:4-triazole (BAMBERGER, PADOVA, and ORMERON), A., 416.
- Benzene-4-azopyridine, and *mono*- and *di*-bromo-, *mono*- and *di*-chloro-, and chlorohydroxy- (KOENIGS, FREIGANG, LOB-MAYER, and ZSCHARN), A., 412.
- 5-Benzeneazosalicylidene- α -2-hydroxy-1-naphthylbenzylamine (BRODE and ADAMS), A., 1032.
- Benzenediazo-2-aminopyridine (TSCHITSCHIBABIN and PERSIC), A., 845.
- Benzenediazonium chloride, decomposition of, by water (PRAY), A., 1214.
- complex salt of arsenic trichloride and (SCHMIDT and HOFFMANN), A., 533.
- nitrate, 3:4:5-triiodo- (KALB, SCHWEIZER, ZELLNER, and BERTHOLD), A., 1162.
- Benzene-*o*-dimethylsulphone (HURTLEY and SMILES), A., 948.
- Benzene-1:2-disulphonic acid, salts and derivatives of (HURTLEY and SMILES), A., 948.
- Benzene-1:3-disulphonic acid, 4:5:6-trichloro-, derivatives of (POLLAK, GEBAUER-FÜLNEGG, and BLUMENSTOCK), A., 833.
- Benzene-1:3-disulphonyl chloride, 1-chloro- (LUSTIG and KAT-SCHER), (P.), B., 964.
- Benzene-4-hydrazo-2:6-dimethylpyridine, *mono*- and *di*-chloro- and their hydrochlorides (KOENIGS, FREIGANG, LOB-MAYER, and ZSCHARN), A., 413.
- Benzene-4-hydrazo-2:6-dimethylpyridine-3-carboxylic acid, *p*-chloro-, hydrochloride (KOENIGS, FREIGANG, LOB-MAYER, and ZSCHARN), A., 413.
- Benzene-4-hydrazopyridine, and *mono*- and *di*-bromo-, and *mono*- and *di*-chloro-, and their salts (KOENIGS, FREIGANG, LOB-MAYER, and ZSCHARN), A., 412.
- Benzenesulphon-azide and -hydrazide, *p*-amino-, and their derivatives (CURTIUS and STOLL), A., 393.
- Benzenesulphonic acid, salts, relation between solubility and water of crystallisation of (EPHRAIM and SEGER), A., 18.
- beryllium salt (SIDGWICK and LEWIS), A., 788.
- glyceryl ester (FAIRBOURNE and FOSTER), A., 145.
- Benzenesulphonic acid, *p*-amino-, acetyl derivative, *p*-acetamido-phenyl ester (CHILD and SMILES), A., 1243.
- Benzenesulphonylacetone, *p*-bromo- (TRÖGER and PAHLE; TRÖGER and UNGAR), A., 524.
- 3-Benzenesulphonyl-2-methylquinoline, 3-*p*-bromo-, and its methiodide (TRÖGER and UNGAR), A., 524.
- Benzenesulphonyl- β -nitro-3-hydroxyphenylacrylonitriles, and *p*-bromo- and *p*-chloro- (TRÖGER and FROMM), A., 69.
- Benzenesulphonyl- β -(4-nitro-3-methoxyphenyl)acrylonitrile, and *p*-bromo- and *p*-chloro- (TRÖGER and FROMM), A., 69.
- 3-Benzenesulphonyl-2-propenylquinoline, 3-*p*-bromo- (TRÖGER and UNGAR), A., 524.
- 3-Benzenesulphonylquinoline, 2-amino-3-*p*-bromomethiodide and ethiodide (TRÖGER and UNGAR), A., 524.
- 3-Benzenesulphonylquinophthalone, 3-*p*-bromo- (TRÖGER and UNGAR), A., 524.
- Benzenesulphonyl-1:2:3-triazole-4-carboxylic acid, 5-hydroxy-1-*p*-amino-, acetyl derivative, ethyl ester (CURTIUS and STOLL), A., 393.
- Benzenethiolsulphonic acid, *p*-amino-, acetyl derivative, and *p*-chloro-, esters of (CHILD and SMILES), A., 1244.
- Benzenyltrimethylamidine nitrate, and *m*-nitro-, hydriodide (FORSYTH, NIMKAR, and PYMAN), A., 611.
- Benzhydryl (*diphenylcarbinol*), naphthylurethane from (BICKEL and FRENCH), A., 517.
- Benzhydrylamine, preparation of, from benzophenoneoxime (HURD), A., 1133.
- Benzhydrylamines, *p*-alkoxylated (TORRES y GONZALEZ), A., 609.
- o*- and *p*-Benzhydrylbenzamidines (JONES and ROOT), A., 280.
- o*- and *p*-Benzhydrylbenzhydroxamic acids, and their salts and derivatives (JONES and ROOT), A., 280.
- o*- and *p*-Benzhydrylbenzoxoic acids, and their derivatives (JONES and ROOT), A., 280.
- p*-Benzhydrylbenz-*p*-toluidide (JONES and ROOT), A., 280.
- o*-Benzhydrylphenyl-2:4-diaminonaphthylamine, and its derivatives (KEHRMANN and BRUNNER), A., 607.
- p*-Benzhydrylphenylcarbimide (JONES and ROOT), A., 280.
- o*-Benzhydrylphenyl-2:4-dinitronaphthylamine (KEHRMANN and BRUNNER), A., 607.
- p*-Benzhydrylphenylurethane (JONES and ROOT), A., 280.
- Benzidine, spatial configuration of (KUHN and ZUMSTEIN), A., 513.
- preparation of flakes of (SPALDING and NAT. ANILINE & CHEMICAL CO.), (P.), B., 817.
- isoamyl and butyl sulphates (POPELIER), A., 1123.
- mercurioides of, and its determination, gravimetrically (HERZOG), A., 1050.
- Benzidines, dinitro-, and their derivatives (LE FÈVRE and TURNER), A., 946.
- Benzidine-2-carboxylic acid, diacetyl derivative (REISSERT and LEMMER), A., 528.
- Benzil (*dibenzoyl*), action of sodamide on (KASIWAGI), A., 728.
- o*-nitrophenylhydrazono (GUHA and DE), A., 743.
- Benzil, 2:4-dinitro-, oximes (BISHOP and BRADY), A., 617.
- 3:5:3':5'-tetranitro-, and its quinoxaline derivative (CHRISTIE and KENNER), A., 408.
- Benzils, dinitro- (CHATTAWAY and COULSON), A., 728.
- Benziloximes, methylation of (BRADY and PERRY), A., 171.
- Benzimidazoles, manufacture of (FARBENFABR. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 850.
- Benzimide, 2-thio-. See 2-Keto-1:2-dihydrobenzisothiazole.
- α -Benzimidazoazopropyl- β -sulphonic acid, and its optically active forms and their salts (BACKER and BLOEMAN), A., 271, 272.
- Benziminoazole-2-thioglycolic acid, derivatives of (STEPHEN and WILSON), A., 1262.
- Benzine, purification of (GES. F. WÄRMETECHNIK and UFER), (P.), B., 623.
- Bergin (LÁSZLÓ), B., 523.
- 5:6-Benzo-1:1'-diethylcarbocyanine bromide (MILLS and RAPER), A., 78.
- Benzodiphenazine, amino-, and its derivatives (KEHRMANN and POEHL), A., 729.
- 1:6:3:4-Benzo-2':2''-diphenyl-3':3''-dimethyl-4':4''-pyrone (WITTIG and RICHTER), A., 302.
- Benzodi-4-pyrone, preparation of (WITTIG and RICHTER), A., 302.
- Benzodiquinone, *p*-dichloro- (POLLAK and GEBAUER-FÜLNEGG), A., 1244.
- Benzoditoluazene, amino-, and its derivatives (KEHRMANN and POEHL), A., 729.
- Benzoic acetal, organogels from (THOMAS and SIBI), A., 903.
- Benzoic acid, and its nitro-derivatives, preparation of (SEYDEL and SEYDEL CHEM. CO.), (P.), B., 463.
- manufacture of (GEORGE and MATHIESON ALKALI WORKS), (P.), B., 76; (STOCKELBACH and MATHIESON ALKALI WORKS), (P.), B., 851.
- dielectric constants of benzene solutions of (PARTINGTON and RULE), A., 601.
- heat of combustion of (VERKADE and COOPS), A., 28; (SWIENTOSLAWSKI), A., 116; (JAEGER and v. STEINWEHR), A., 477; (VERKADE), A., 1103.
- volatility of (LERRIGO), B., 802.
- molecular association of, in benzene (WILCKEN), A., 906.
- equilibria of, in binary systems (PUSHIN and VILOVITSCH), A., 245.
- conjugation of, in dogs (QUICK), A., 539.

- Benzoic acid and its derivatives, action of, on micro-organisms (SABALITSCHKA, DIETRICH, and BÖHM), A., 1059.
 derivatives, action of high temperature and pressure on (IPATIEV, ORLOV, and PETROV), A., 724.
 Benzoic acid, salts, assay of (CLARK), B., 767.
 sodium salt, clinical studies on (BRYAN), A., 426.
 thallos salt (WALTER), A., 712.
 Benzoic acid, esters, nitration of (ROBINSON), A., 1245.
l-isobornyl ester (PEIGNIER), A., 1251.
γ-chloropropyl ester (KIMER), A., 1224.
p-cumyl ester (BERT), A., 285.
 2:4-dinitrobenzyl ester (KRASSOVSKI and PLISSOV), A., 949.
 Benzoic acid, *p*-amino-, ethyl ester, derivatives of (GORI), A., 1037.
 and *p*-nitro-, alkyl esters, constitution, properties, and physiological action of (ADAMS, RIDEAL, BURNETT, JENKINS, and DREGER), A., 834.
 3-carbethoxy-1-alkyl-4-piperidyl esters, hydrochlorides of (MC ELVAIN), A., 1044.
β-chloroethyl esters (ROSENZWEIG and LEGERLOTZ), (P.), B., 964.
 3-amino-4-hydroxy-, *N*-4-toluenesulphonyl derivative (HEWITT, KINO, and MURCH), A., 851.
 3-bromo-2-amino-, acetyl derivative (BURTON, HAMMOND, and KENNER), A., 966.
 3-bromonitro-, ethyl ester (BURTON, HAMMOND, and KENNER), A., 966.
 2-bromo-3:5-dinitro- (MEISENHEIMER, ZIMMERMANN, and v. KUMMER), A., 405.
 tetrachloro-, *o*-hydroxybenzoyl derivative, and its diacetate (ORNDORFF and PARSONS), A., 290.
 3:5-dichloro-2-amino-, acetyl derivative (ELION), A., 165.
 5-chloro-2:4-dihydroxy- (HEMMELMAYR and MEYER), A., 404.
 halogen derivatives, fate of, in the body (NOVELLO, MIRIAM, and SHERWIN), A., 638.
di- and *tri*-hydroxy-, acetyl derivatives (LESSER and GAD), A., 402.
 5-iodo-3-amino-4-hydroxy-, 3-acetyl derivative (MASCHMANN), A., 1265.
 4:6-diiodo-2-nitro-5-amino-, and 4:5:6-triiodo-2-nitro- (KALB, SCHWEIZER, ZELLNER, and BERTHOLD), A., 1152.
m-nitro-, hydrazine hydrate (MÜLLER and ZIMMERMANN), A., 163.
o-, *m*-, and *p*-nitro-, 1-*β*-octyl esters (RULE and NUMBERS), A., 1038.
 3:5-dinitro-, esters of, and their molecular compounds with *α*-naphthylamine and benzidine (REICHSTEIN), A., 1225.
β-chloroethyl ester (JONES and BURNS), A., 156.
 2-nitro-5-amino-, ethyl ester (KALB and GROSS), A., 014.
o-thiol-, antimony sodium salt, preparation of (FARB. v. BAYER & Co.), (P.), B., 385, 996.
 derivatives of (ARNDT, KIRSCH, and NACHTWEY), A., 843.
 Benzoic acids, amino-, *n*-butyl esters, manufacture of (MARKS and ABBOTT LABORATORIES), (P.), B., 692.
p-amino-, *N*-substituted, alkaline esters (FARBW. VORN. MEISTER, LUCIUS, & BRÜNING), (P.), B., 107.
 Benzoic anhydride, 3:5-dinitro- (REICHSTEIN), A., 1225.
o-Benzoic sulphinate (*saccharin*), chemistry of (HERZOG), B., 607.
 hydrolysis of (TÄUFEL and NATON), A., 518.
 See also *Saccharin*.
 Benzoin, solution of copper in pyridine solutions of (MOHLER), A., 71.
 naphthylurethane from (BICKEL and FRENCH), A., 517.
α-Benzoinoxime, copper salt (FEIGL, SICHER, and SINGER), A., 70.
 Benzol, extraction of, from heavy oils (BARBET), (P.), B., 479*.
 distillation of, from wash oil (BERGHAU A.-G. LOTHINGEN), (P.), B., 941.
 recovery of, from gases (HEITMAN), (P.), B., 941.
 recovery by the vacuum method (GAREIS), B., 427.
 refining of (COX and McDERMOTT), (P.), B., 264.
 determination of free sulphur in (ORMANDY and CRAVEN), B., 232.
 See also *Benzene*.
 Benzol wash-oil, distillation of (GOLDSCHMIDT), (P.), B., 39;
 (ZECHÉ STINNES, WEINDEL, and KIEMSTEDT), (P.), B., 230;
 (HILGENSTOCK), B., 809.
 Benzomethylamides, *o*- and *p*-nitro- (BRADY and DUNN), A., 1142.
 2:3-Benzo-6:7-methylbenzo-4:5-dihydro-1:4:5-heptatriazine (GUBA and DE), A., 743.
 2:3-Benzo-6:7-naphtho-4:5-dihydro-1:4:5-heptatriazine (GUHA and DE), A., 743.
 Benzonitrile, 3:5-dibromo-2-hydroxy-, and its acetyl derivative (LINDEMANN and MÜHLHAUS), A., 80.
 3:4-dichloro- (KRAAY), A., 1034.
o-thiocyano- (ARNDT, KIRSCH, and NACHTWEY), A., 843.
 Benzophenone, preparation of (CRAYER), A., 294.
 rate of spread of, over glass (VOLMER and ADHIKARI), A., 467.
 3:5-dichloro-6-nitrophenylhydrazine (MÜLLER and HOFFMANN), A., 163.
 nitrophenylsemicarbazone (WHEELER and WALKER), A., 62.
 Benzophenone, trihydroxy-, ferric salt (ZETZSCHE and LOOSLI), A., 67.
 2:3:4-trihydroxy-, and its diacetyl derivative, diacetoborates of (DIMROTH), A., 298.
 Benzophenones, bromonitro-, chloronitro-, and dinitrohydroxy-, and their oximes (MEISENHEIMER, ZIMMERMANN, and v. KUMMER), A., 405.
 hydroxy-, preparation of (ATKINSON and HEILBRON), A., 1249.
 Benzophenoneimine (GOLDSCHMIDT and BEUSCHEL), A., 607.
 Benzophenoneoxime, preparation of benzhydrylamino from (HURD), A., 1133.
 Benzopolymethylene compounds (v. BRAUN and REUTER), A., 1139.
 Benzopurpurin sols, ageing of (FREUNDLICH and DANNENBERG), A., 471.
 Benzopyran, oxonium compounds of (KEHRMANN and RIEDER), A., 732.
*spiro*Benzopyrans, substituted (LÖWENSTEIN and KATZ), A., 956.
p-Benzoisopyrazolone, and its acetyl derivative (HELLER), A., 286.
 1:2-Benzopyrone, 3-bromo-4:6-dihydroxy-, and 4:6-dihydroxy-, and their derivatives (MALACHOWSKI), A., 732.
 Benzopyrones, formation of (BAKER), A., 74.
 action of hydroxylamine on (WITTIG and BANGERT), A., 175, 176.
 Benzo-1:4-pyrones (WITTIG, BANGERT, and RICHTER), A., 300.
 1:4-Benzopyrone-3:5-dicarboxylic acid, 2:6-dihydroxy-, methyl ester, and its salts (SCHROETER and FINCK), A., 731.
 Benzopyrylium salts, synthesis of (PERKIN, RAY, and ROBINSON), A., 732.
o-Benzoquinone, 3:5-diamino-, diacetyl derivative, and its 1-oxime (KEHRMANN and POEHL), A., 729.
p-Benzoquinone, absorption spectrum of (LIFSCHITZ and ROSENBOHM), A., 884.
 oxidation products of (TERRY and MILAS), A., 1249.
 dichloride, and amino-, acetyl derivative (DIMROTH, EBER, and WEHR), A., 296.
 semicarbazone (PIERONI and BUZZI), A., 285.
 Benzoquinone, 3:5-dibromo-2:6-diiodo- (KOHN and ROSENFELD), A., 232.
 2-chlorodibromo- (KOHN and SUSSMANN), A., 832.
 tetrahydroxy-, effect of, on conductivity of boric acid (BÖESEKEN and MEUWISSEN), A., 801.
 Benzoquinones, amino-, and hydroxy-, oximes of, and their acetyl derivatives (KEHRMANN and STERCHI), A., 1146.
 Benzoquinone-4-azide, 2:6-diiodo- (KALB, SCHWEIZER, ZELLNER, and BERTHOLD), A., 1152.
p-Benzoquinone-1-imine, 2-amino-5:6-dihydroxy- (KEHRMANN and POEHL), A., 729.
 2-*α*-Benzostyryl-3-benzyl-*β*-naphthapyrylium perchlorate, 2-*o*-hydroxy- (LÖWENSTEIN and KATZ), A., 956.
 2-*α*-Benzostyryl-3-methyl-*β*-naphthapyrylium salts, 2-*o*-hydroxy- (LÖWENSTEIN and KATZ), A., 956; (DILTHEY, BERRES, HÖLTERHOFF, and WÜBKEN), A., 1255.
α-Benzostyryl-*β*-naphthapyrylium chloride, 2-*o*-hydroxy- (DILTHEY, BERRES, HÖLTERHOFF, and WÜBKEN), A., 1255.
 2-*α*-Benzostyryl-3-phenyl-*β*-naphthapyrylium salts, 2-*o*-hydroxy- (LÖWENSTEIN and KATZ), A., 956; (DILTHEY, BERRES, HÖLTERHOFF, and WÜBKEN), A., 1255.
 Benzo-tetramethyl-di-4':4''-pyrones (WITTIG and RICHTER), A., 302.
 Benzisooxazole. See *Indoxazin*.
 Benzoxazoles, quaternary salts of (CLARK), A., 309.
 Benzoxazolone-5-arsinic acid (CASSELLA & Co.), (P.), B., 28*.
 Benzoyl chloride, manufacture of (GEORGE, and MATHIESON ALKALI WORKS), (P.), B., 76.
 3:5-dinitro-, use of, as reagent for alcohols (REICHSTEIN), A., 1225.
 cyanide, action of organo-magnesium compounds on (DE COSTER), A., 1027.
 hydroperoxide. See *Perbenzoic acid*.

- Benzoyl peroxide, action of, on benzene, in presence of metallic chlorides (BÖSEKEN and REYNHART), A., 1037.
action of, on cyclohexane (GELISSEN and HERMANS), A., 612.
reaction of iodine with (ERLENMEYER), A., 1138.
determination of, iodometrically (GELISSEN and HERMANS), A., 286.
- 3-Benzoylacenaphthene, and 4-nitro- (DZIEWOŃSKI and RYCHLIK), A., 70.
- 3-Benzoylacenaphthenequinone, and its trioxime (DZIEWOŃSKI and RYCHLIK), A., 70.
- Benzoylactic acid, ethyl ester, action of concentrated and fuming sulphuric acid on (FEIST, PAUSCHARDT, and DIBBERN), A., 74.
- Benzoylactic acid, *o*-nitro- (OVERMYER), A., 415.
- Benzoylacetone, alkali salts (SIDGWICK and BREWER), A., 71.
thallous salts (CHRISTIE and MENZIES), A., 56.
o-alkyl derivatives of (CLAISEN), A., 406; (WEYOAND), A., 1248.
- Benzoylacetone, *o*-hydroxy- (WITTIG, BANGERT, and RICHTER), A., 300.
- ω -Benzoylacetophenone, *m*- and *p*-chloro-, and *m*- and *p*-nitro-, and their copper derivatives (BRADLEY and ROBINSON), A., 1145.
- 2-Benzoylacetophenol, 4-chloro-, and its benzoate (WITTIG, BANGERT, and RICHTER), A., 301.
- Benzoylallylegonine, and its salts (POULSON), (P.), B., 771.
- 2-Benzoyl-3-anilino-5-thiol-4-phenyl-1:2:4-triazole, and its derivatives (FROMM), A., 717.
- 2-Benzoylanthrapurpurin (GREEN), A., 1041.
- Benzoylazotriphenylmethane, and *p*-bromo- (WIELAND, VOM HOVE, and BÖRNER), A., 62.
- Benzoylazotri-*p*-tolylmethane (WIELAND, VOM HOVE, and BÖRNER), A., 62.
- Benzoyl-*p*-benzamidobenzoylhydrazine, and its acetyl derivative (HELLER), A., 286.
- 2'-Benzoylbenzanthrone, 3'-bromo- (GEORGEACOPOL), A., 840.
- Benzoylbenzene-*o*-sulphonic acid, 2:3:4-trihydroxy-, and its ammonium salt and tribenzoate (ORNDORFF and FUCHS), A., 949.
- ω -Benzoylbenzoic acid, preparation of (KLIPSTEIN & SONS, STONE, and JACOBSON), (P.), B., 869.
- Benzoylbenzylegonine, and its hydrochloride (POULSON), (P.), B., 771.
- 2-Benzoylcyclobutane-1:2:3-tricarboxylic acid, ethyl ester (ING and PERKIN), A., 48.
- Benzoylisobutylamide, 3:5-dinitro- (REICHSTEIN), A., 1225.
- α -Benzoylcamphor, absorption spectra of (MORTON and ROSNEY), A., 454.
- Benzoyl-5-chloro-2:4-dinitrophenylhydrazine (MÜLLER and ZIMMERMANN), A., 163.
- 2-Benzoyl-1-*p*-chlorophenylcyclopentenes, 2-*p*-chloro- (SKRAUP and GUGGENHEIMER), A., 171.
- 3-Benzoylcoumarin, and 7-hydroxy-, and 6-nitro-, and their derivatives (GHOSAL), A., 1149.
- 3-Benzoylcoumarins, and their phenylhydrazones (GHOSAL), A., 1149.
- Benzoyldihydroindigotin, *tetra-p*-nitro- (POSNER, STOCKENSCHNEIDER, NEUMANN, NACHRING, MEYER, and BEISSNER), A., 1155.
- N*-Benzoyl-7:7'-dimethyldihydroindigotin benzoate, *N*-nitroso-2-hydroxy- (POSNER, STOCKENSCHNEIDER, NEUMANN, NACHRING, MEYER, and BEISSNER), A., 1155.
- N*-Benzoyl-7:7'-dimethylindigotin (POSNER, STOCKENSCHNEIDER, NEUMANN, NACHRING, MEYER, and BEISSNER), A., 1155.
- Benzoyl-2:4-dimethylpyrrolecarboxylic acids, ethyl esters (FISCHER and SCHUBERT), A., 737.
- 5-Benzoyl-3:4-diphenylisooxazoline, 5-hydroxy- (KÖHLER), A., 309.
- α -Benzoylcene-2:3-phenazinoiminazole (SIRCAR and DE), A., 417.
- 4-Benzoyl-5-ethylimino-2-phenyloxazoline (GRÄNACHER), A., 79.
- Benzoylformhydroxamic acid, and *p*-bromo-, and their derivatives (GASTALDI and PRINCIVALLE), A., 1260.
- Benzoyl-*d*-glutamic acid, ethyl and methyl esters (ABDERHALDEN and ROSSNER), A., 603.
- Benzoylglycide (ZETSCHE and AESCHLIMANN), A., 1225.
- O*-Benzoylglycollamide, *p*-hydroxy- (CHRISTIANSEN), A., 518.
- Benzoylglycollic acid, 3:4:5-trihydroxy-, and its amide, and their antimony compounds (CHRISTIANSEN), A., 725.
- d*-Benzoylglycuronic acid, and its methyl ester and lactone (QUICK), A., 1056.
- Benzoylglycyl-leucine, ethyl ester (GRÄNACHER, SCHELLING, and SCHLATTER), A., 78.
- ϵ -Benzoylhexoic acid, ϵ -*p*-chloro- (SKRAUP and GUGGENHEIMER), A., 171.
- α -Benzoylhippuric acid, ethyl ester (GRÄNACHER), A., 80.
- α -Benzoylhippuric ethylamide (GRÄNACHER), A., 79.
- Benzoylhydrastinine-4-amino-1-phenyl-2:3-dimethyl-5-pyrazolone (THOMÄ CHEM. FABR. and GÖTTLER), (P.), B., 900.
- Benzoylhydrazine, *o*-chloro-, and 2-nitro-5-amino- (KALB and GROSS), A., 614.
- 1-Benzoylindazole-3-carboxylic acid, 1-*o*-nitro-, ethyl ester (v. AUVERS and STRÖDTER), A., 529.
- N*-Benzoylindirubin (POSNER, STOCKENSCHNEIDER, NEUMANN, NACHRING, MEYER, and BEISSNER), A., 1156.
- N*-Benzoylisatoic acid, amide and ethyl ester, and its phenylhydrazono (HELLER and LAUTH), A., 957.
- d*- ϵ -Benzoyl-lysine, and its derivative (KARRER and EHRENSTEIN), A., 603.
- Benzoylmetazonic acid (PONZIO), A., 1159.
- α -Benzoyl- β -methoxy- γ -diethylaminopropane, and *p*-amino-, and *p*-nitro-, hydrochlorides (SCHOELLER), (P.), B., 465.
- α -Benzoyl- β -methoxy- γ -iodopropane, and *p*-nitro- (SCHOELLER), (P.), B., 465.
- α -Benzoyl- β -methoxypropane, and *p*-nitro-, γ -mercuroiodides (SCHOELLER), (P.), B., 465.
- o*-Benzoylmethylaminoanisole (CLARK), A., 309.
- o*-Benzoylmethylaminophenylurethane (CLARK), A., 309.
- Benzoylmethylglyoxime, palladium salt (HANUŠ, JÍLEK, and LUKAS), A., 141.
- 5-Benzoyl-2-methylpyrrole-3-carboxylic acid, ethyl ester (FISCHER and SCHUBERT), A., 737.
- 9-Benzoyl-6-methyltetrahydrocarbazole (MANJUNATH and PLANT), A., 1151.
- 4-Benzoyl-1-methyl-1:2:3:5-tetrazole, 4-*o*-hydroxy-, and its acetyl derivative (FRIES and SAFTIEN), A., 849.
- 4-Benzoylnaphthalic acid, 5-nitro-, anhydride and imide (DZIEWOŃSKI and RYCHLIK), A., 70.
- Benzoyl-1:2:4-oxadiazoles, hydroxy-, and their salts and phenylhydrazones (PONZIO), A., 1159.
- 4-Benzoyloxy-3-carbethoxyisoamylpiperidine hydrochloride (McELVAIN), A., 1044.
- ω -Benzoyloxyphloracetophenone, and its triacetyl derivative (HEAP and ROBINSON), A., 1149.
- 2-Benzoyloxypyridine. See Benzoyl-2-pyridone.
- ω -Benzoyloxypresacetophenone, and its diacetyl derivative (HEAP and ROBINSON), A., 1149.
- 2-Benzoylphenol, 4-chloro- (WITTIG, BANGERT, and RICHTER), A., 301.
- p*-Benzoylphenoxyacetic acid, and its ethyl ester and oxime (TORRES Y GONZALES), A., 396, 609.
- 2-Benzoyl-2-phenyl-1:3-benzodithiole (HURTLEY and SMILES), A., 1150.
- Benzoylphenylbenzylcarbinol. See Benzylbenzoin.
- 2-Benzoyl-2-phenyl-1:3-dithiolan (HURTLEY and SMILES), A., 1150.
- Benzoyl- α -phenylpropionic acid, β -bromo-, and β -chloro-, and its derivatives (KÖHLER and SHOHAN), A., 1140.
- 2-Benzoyl-5-phenyl-4-*p*-tolyl-1:2:4-triazol-3-one (FROMM), A., 717.
- N*-Benzoylpiperidine, melting and boiling points of (VERKADE, HARTMAN, and COOPS), A., 686.
- α -Benzoylpropane, α -imino-, salts of (DE COSTER), A., 1027.
- β -Benzoylpropionic acid, 2:4-dihydroxy-, and its sodium salt and dibenzoyl derivative (MURAI), A., 951.
- 2- and 4-Benzoylpyridines, *p*-amino-, and *p*-nitro-, and their salts and derivatives (KÖNIGS, MENSCHING, and KIRSCH), A., 1153.
- Benzoyl-2-pyridone, and its chloroplatinate (TSCHITSCHIBABIN and OPARINA), A., 179.
- O*-Benzoylpyrogallol (ZETSCHE and LOOSLI), A., 67.
- 4-Benzoyl-1:2:3:5-tetrazole, 4:5'-chloro-2'-hydroxy-, and its derivatives (FRIES and SAFTIEN), A., 849.
- 4-*o*-hydroxy-, and its silver salt (FRIES and SAFTIEN), A., 849.
- 6-Benzoyltriacetyl- β -methylglucoside (OHLE and SPENCKER), A., 1126.
- Benzoyl-2:4:5-trimethoxydiphenylmethane (SZÉKI), A., 285.
- Benzoyl-2:4:5-trimethoxytriphenylmethane (SZÉKI), A., 285.
- 4-Benzoyl-2:3:5-trimethylpyrrole (FISCHER and SCHUBERT), A., 737.
- Benzoyltriphenylmethylhydrazine, and *p*-bromo- (WIELAND, VOM HOVE, and BÖRNER), A., 62.
- 1-Benzoyl-2:4:5-triphenylcyclopentane (CONANT and CUTTER), A., 616.
- 1-Benzoyl-2:4:5-triphenyl- Δ^1 -cyclopentene (CONANT and CUTTER), A., 616.
- Benzoyltri-*p*-tolylmethylhydrazine (WIELAND, VOM HOVE, and BÖRNER), A., 62.
- 8-Benzoylvaleric acid, 8-*p*-chloro- (SKRAUP and GUGGENHEIMER), A., 170.

- Benzpinacol, 4,4':4'':4'''-tetrabromo-, crystal structure of (JAEGER), A., 890.
- Benzthiazole, 1-amino-, acetyl and benzoyl derivatives, and their bromides (HUNTER), A., 849.
- amino- and bromoamino-, and their derivatives (HUNTER), A., 850.
- 1-thiol-, preparation of (AZZALIN), A., 310.
- Benzthiazoles, synthesis of (BOGERT and STULL), A., 183.
- odour and chemical constitution of (BOGERT and STULL), B., 384.
- Benzthiazoles, amino- (HUNTER), A., 81, 849, 850.
- Benzthiazole-1-azo- β -naphthol (HUNTER), A., 850.
- Benztriazole, 4-chlorohydroxy-, salts and derivatives of (MÜLLER and ZIMMERMANN), A., 163.
- 4:5-dichlorohydroxy-, and their salts and derivatives (MÜLLER and HOFFMANN), A., 163.
- 5:7-dichloro-6-nitro-1-hydroxy-, and its derivatives (BORSCHKE and TRAUTNER), A., 390.
- 1:2:3-Benztriazole, 6-bromo-1-hydroxy-, and 6-chloro-1-hydroxy- (BOOY and DIENSKE), A., 848.
- Benzyl alcohol, dehydration of (NAMETKIN and KURSANOV), A., 399.
- naphthylurethano from (BIOKEL and FRENCH), A., 517.
- determination of, in presence of phenylethylcarbinol (MEISENHEIMER), A., 68.
- Benzyl alcohol, *o*-amino-, acetyl and benzoyl derivatives, and their derivatives (RAIFORD and CLARKE), A., 517.
- 3:4-dichloro- (KRAAY), A., 1034.
- 3:4-dihydroxy-. See Protocatechuyl alcohol.
- 2:4-dinitro-, esters of (KRASSOVSKI and PLISSOV), A., 949.
- Benzyl alcohols, dibromo- (OLIVIER), A., 511.
- hydroxy-, pharmacology of (CHRISTOMANOS), A., 541.
- Benzyl 9-anthryl disulphide (FOOTNER and SMILES), A., 159.
- barium phosphate (ZETZSCHE and NACHMANN), A., 46.
- bases, optical study of (COURTOT and PETITCOLAS), A., 607.
- bromide, iodide, meroaptan, disulphide, and sodium thio-sulphate, cyano- and nitro-derivatives (POGGI), A., 159.
- bromides, bromo-, chloro-, and fluoro- (SHOESMITH and SLATER), A., 389.
- bromides and chlorides, dibromo-, and their hydrolysis (OLIVIER), A., 511.
- chloride, *m*-chloro- (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- and 2:4-dichloro- (CHEM. FABR. GRIESEHEIM-ELEKTRON), (P.), B., 816.
- 2-chloro-5-nitro- (MEISENHEIMER, ZIMMERMANN, and v. KUMMER), A., 406.
- chlorides, substituted, hydrolysis of (OLIVIER and BERGER), A., 805.
- chloromethyl ether (HILL and KEACH), A., 271.
- compounds, physiology of (JENSEN), A., 91.
- groups, structure of (STEEPOE), A., 944.
- halides, action of magnesium methyl iodide on (FUSON), A., 1237.
- o*- and *p*-cyano- (FUSON), A., 604.
- iodides, bromo- (SHOESMITH and SLATER), A., 389.
- mercaptan, silver salt (WERTHEIM), A., 497.
- methyl ethers, bromo- (SUPNIEWSKI and ADAMS), A., 420; (SUPNIEWSKI), A., 966.
- oxide, sodium, reactions of, with alkyl iodides (GOLDSWORTHY), A., 691.
- propyl sulphide, γ -hydroxy-, and its benzoate (ROJAHN and LEMME), A., 145.
- Benzylacetone δ -methylanilinosemicarbazone and *p*-tolylhydr-azone (BAIRD and WILSON), A., 1141.
- Benzylamine, infra-red absorption spectrum of (BELL), A., 453.
- nitration of, and its derivatives (ING and ROBINSON), A., 946; (GOSS, INGOLD, and WILSON), A., 1132.
- α -naphthylcarbamide from (FRENCH and WIRTEL), A., 830.
- ethyl sulphate (POPELIER), A., 1123.
- and *o*-nitro-, *p*-toluenesulphonates and benzenesulphonate (NEBER and v. FRIEDOLSHHEIM), A., 1248.
- Benzylamine, *p*-bromo-, *m*-chloro-, and dichloro-, and their salts and benzoyl derivatives (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- nitro-, picrates (GOSS, INOOLD, and WILSON), A., 1133.
- 1- ζ -Benzylamino-*n*-amylpiperidine, and its salts and nitroso-com-pound (v. BRAUN, KÜHN, and GOLL), A., 1259.
- β -Benzylamino-*n*-butyric acid, α -cyano-, ethyl ester and hydro-chloride (SCHEIBLER and NEEF), A., 943.
- cis*- and *trans*-1-Benzyl-2-aminocyclohexanes, and their deriv-atives (SCHOFF and BOETTCHER), A., 744.
- 2-Benzylamino-1:6:8-trinitronaphthalene (VAN DER KAM), A., 1240.
- 3-Benzylaminotoluene, 2:4-dinitro- (GORNALL and ROBINSON), A., 1029.
- 9-Benzylanthracene, 10-bromo-, and its tetrabromide, 2:3:10-tri-bromo-, 10-chloro-, and 10-nitro- (COOK), A., 1131.
- 9-Benzylanthranyl 10-acetate (COOK), A., 1131.
- 9-Benzylanthranyl-10-pyridinium bromide (COOK), A., 1131.
- 10-Benzylanthraphenone (COOK), A., 1131.
- Benzylbenzoin acetate (VILA and CEREZO), A., 1041.
- Benzyl-6-benzylidenecyclohexanone, 2- α -hydroxy- (VORLÄNDER and KUNZE), A., 1144.
- Benzyl-*p*-bromobenzylamine, *p*-chloro-, and its salts and benzoyl derivative (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- Benzyl-*p*-bromobenzylmethylamine, *p*-chloro-, and its salts (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- Benzylchlorobenzylamines, and chloro-, and their salts and benz-oyl derivatives (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- Benzyl- β -decahydronaphthalene ketone, *o*-hydroxy- (RIEDEL), (P.), B., 610.
- 3-Benzylspirodibenzopyran (LÖWENHEIN and KATZ), A., 956.
- Benzyl-diethylamine, nitration of (FLÜRSCHHEIM and HOLMES), A., 830.
- 9-Benzyl-9:10-dihydroanthracene, 10-nitro-9-hydroxy- (COOK), A., 1131.
- 10-Benzyl-9:10-dihydroanthraphenone (COOK), A., 1131.
- 9-Benzyl-9:10-dihydroanthraquinyl-9:10-dipyridinium bromide (COOK), A., 1131.
- Benzyl-dimethylamine, *o*-chloro-, and *p*-iodo-, and their salts (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- m*-nitro- (GOSS, INGOLD, and WILSON), A., 1133.
- trans*-1-Benzyl-2-dimethylaminocyclohexane methiodide (SCHOFF and BOETTCHER), A., 744.
- Benzyl-dimethylammonium bromide, *di*-*o*-chloro-, and *di*-*p*-iodo- (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- Benzyl-dimethylarsine, derivatives of (ROBERTS, TURNER, and BURY), A., 852.
- 3-Benzyl-2:5-dimethylbenzo- γ -pyrone, 7-hydroxy-, and its deriv-atives (BAKER), A., 75.
- 3-Benzylspirodi-2:2'- β -naphthapyran (LÖWENSTEIN and KATZ), A., 956.
- β -Benzyl- α -diphenyl- δ -valerolactones, isomeric (STOERMER, THIER, and LAAGE), A., 160.
- o*-Benzyleneindole, and its acetyl derivative (LEUCHS and KOWAL-SKI), A., 293.
- d*- α -Benzylethylamine hydrochloride (JONES and WALLIS), A., 280.
- α -Benzyl- α -ethylbutyronitrile (RAMART), A., 718.
- d*- α -Benzylethylcarbamide (JONES and WALLIS), A., 280.
- d*- α -Benzylethylcarbamide (JONES and WALLIS), A., 280.
- Benzylethylene, dibromoiodo- (GRIGNARD and PERRICHON), A., 382.
- Benzyl ethyl ketone, bromo-, and its semicarbazone (GRIGNARD and PERRICHON), A., 382.
- Benzylcyclohexanone, 2- α -hydroxy- and its acetate (VORLÄNDER and KUNZE), A., 1144.
- 1-Benzylcyclohexanone-2-oxime (SCHOFF and BOETTCHER), A., 744.
- 1-Benzyl-2'-cyclohexene dibromide (SCHOFF and BOETTCHER), A., 744.
- 4-Benzylhydantoin-1- α -propionic acids, 4-*p*-hydroxy-, and their ethyl esters (HAHN and GILMAN), A., 180.
- Benzylidene bromide, *o*-cyano- (FUSON), A., 612.
- halides, *m*-nitro-, action of alcoholic alkali hydroxides on (KLIEGL and HÖLLE), A., 720.
- Benzylideneacetoacetic acid, ethyl ester, action of phenylhydr-azine on (v. AUWERS and MAUSS), A., 624.
- Benzylideneacetylisopropylidenebenzidine, *p*-nitro- (DENNETT and TURNER), A., 391.
- Benzylideneaminoacetic-acetic anhydride (SCHEIBLER and NEEF), A., 943.
- β -Benzylideneamino-*n*-butyric acid, sodium salt (SCHEIBLER and NEEF), A., 943.
- 4-Benzylideneaminodiphenyl (BELL and KENYON), A., 1241.
- 7-Benzylideneamino-5-methylindazole, 7-*p*-nitro-, and its acetyl derivative (v. AUWERS and FRESE), A., 529.
- o*-Benzylideneaminophenyl acetate, and its hydrolysis (BELL and KENYON), A., 947.
- Benzylideneaniline, mercuration of (SACHS, DRESSLER, and SMIRZITZ), A., 392.
- Benzylideneaniline-2'-carboxylic acid, 2:3:4-trihydroxy- (CHRIS-TIANSEN), A., 725.
- Benzylideneaniline-4'-sulphonic acid, 2:3:4-trihydroxy- (CHRIS-TIANSEN), A., 725.
- Benzylideneanthrone dibromide, derivatives of (COOK), A., 1131.

- Benzylidene-*d*-arginine (BERGMANN and ZERVAS), A., 603.
- Benzylideneazides, 3:5-dibromo-2-hydroxy-, and hydroxy- (LINDEMANN and MÜHLHAUS), A., 80.
- Benzylidenbenzylamine, compound of mercuric chloride and (SACHS, DRESSLER, and SMIRZITZ), A., 392.
- 2-Benzylidenbenzylbenzimidazole (SKRAUP and BÖHM), A., 722.
- Benzylidene-1-benzylbenzoxazole (SKRAUP and BÖHM), A., 722.
- Benzylidene-*m'*-bromobenzoylhydrazine, *m*-bromo- (KALB and GROSS), A., 614.
- Benzylidene-*l*-cystine, and *o*-hydroxy-, and its barium salt (BERGMANN and ZERVAS), A., 603.
- Benzylidene- β -decahydronaphthalene ketone, *o*-hydroxy- (RIEDEL), (P.), B., 610.
- Benzylidenedi- β -naphthol. See Phenyl-di-2-hydroxy- α -naphthylmethane.
- 5-Benzylidene-2:3-diphenylisothiohydantoin, and 5:3:4'-dihydroxy-, and 5-*o*-nitro- (HANN and MARKLEY), A., 623.
- Benzylideneditolylureides (LANGE), A., 1158.
- Benzylidene-crythritol, *o*-nitro- (I. and H. TANASESCU), A., 726.
- Benzylidene-ethylamine, compound of mercuric chloride and (SACHS, DRESSLER, and SMIRZITZ), A., 392.
- Benzylideneglycol, *o*-nitro-, and its derivatives (I. and H. TANASESCU), A., 726.
- Benzylidenehistidine, *o*-hydroxy-, and its brucine salt (BERGMANN and ZERVAS), A., 603.
- Benzylidene-*d*-lysine, and *o*-hydroxy- (BERGMANN and ZERVAS), A., 603.
- Benzylidene- β -3-methoxy-4-benzoyloxyphenylethylamine (AKABORI), A., 957.
- Benzylidene-*ar*-methoxy- α -tetrahydronaphthalene ketone (RIEDEL), (P.), B., 610.
- 4-Benzylidene-3-methylhydantoin-1-acetic acid, methyl ester (HAIN and GILMAN), A., 131.
- o*-Benzylidene-*d*-ornithine (BERGMANN and ZERVAS), A., 603.
- Benzylidene-3-phenylsemicarbazone (BAKER and MULDER), A., 182.
- Benzylidenephthalide, action of magnesium benzyl chloride on (WEISS, GROSTEIN, and SAUERMANN), A., 401.
- formation of 2-phenyl-3-arylidones from, and its isomeric and bromo-derivative (WEISS and SAUERMANN), A., 294.
- α -Benzylidenepropionic acid, cholesteryl ester (SOC. CHEM. IND. IN BASLE), (P.), B., 141.
- Benzylidenesalicylidenebenzidine, *p*-nitro- (DENNETT and TURNER), A., 391.
- Benzylidene-*dl*-serine, *o*-hydroxy-, and its salts (BERGMANN and ZERVAS), A., 603.
- Benzylidenestearylhydrazine, and *o*-nitro- (VAN ALPHEN), A., 47.
- Benzylidene- α -tetrahydronaphthalene ketone (RIEDEL), (P.), B., 610.
- Benzylidene-*o*-toluidine-4'-sulphonio acid, 2:3:4-trihydroxy- (CHRISTIANSEN), A., 725.
- Benzylidenexanthen, *p*-chloro- (CONANT and SMALL), A., 158.
- Benzylindanylaniline (COURTOT and PETITCOLAS), A., 607.
- Benzylindanyltoluidines (COURTOT and PETITCOLAS), A., 607.
- Benzyl-*p*-iodobenzylamine, *p*-bromo-, and its salts and benzoyl derivative (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- Benzyl-*ar*-methoxy- α -tetrahydronaphthalene ketone (RIEDEL), (P.), B., 610.
- d*-Benzylmethylacetazide (JONES and WALLIS), A., 280.
- Benzylmethylacetylhydroxamic acids, optically active, and their derivatives (JONES and WALLIS), A., 280.
- Benzylmethylacetic acid, *d*-methyl ester (JONES and WALLIS), A., 279.
- Benzylmethylamine, *p*-chloro-, and its salts (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- trans*-1-Benzyl-2-methylaminocyclohexane, and its hydrobromide (SCHOPF and BOETTCHER), A., 744.
- 1-Benzyl-2-methylamino-4'-cyclohexene hydrobromide (SCHOPF and BOETTCHER), A., 744.
- 4-Benzylmethylamino-1-phenyl-2:3-dimethyl-5-pyrazolone (FARBW. VORM. MEISTER, LUCIUS, and BRÜNING), (P.), B., 611.
- 3-Benzyl-2-methylbenzo- γ -pyrones, dihydroxy-, and their diacetyl derivatives (BAKER), A., 75.
- Benzylmethyl- β -bromoallylamine, and its salts (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- Benzylmethylcarbinol, trichloro-, and its derivatives (HOWARD), A., 496.
- Benzylmethyl- γ -chloroallylamine (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- ζ -Benzyl- β -methyl- Δ^8 -heptadiene (ESCOURROU), A., 1120.
- ζ -Benzyl- β -methyl- Δ^8 -hepten- ζ -ol (ESCOURROU), A., 1023.
- Benzyl methyl ketone, condensation of, with salicylaldehyde (DICKINSON), A., 1144.
- Benzyl methyl ketone, and its derivatives (KÜSTER, ERFLE, v. ROLL, and SCHILLER), A., 821.
- Benzyl methyl ketone, α -amino-, and *o*-nitro-, derivatives of, and *o*-nitro- α -amino-, hydrochloride (NEBER and v. FRIEDOLSHEIM), A., 1248.
- Benzyl methyl ketoxime *p*-toluenesulphonate (NEBER and v. FRIEDOLSHEIM), A., 1247.
- β -Benzyl- β -methylpropane, $\alpha\gamma$ -dihydroxy- (FRANKE and SIGMUND), A., 292.
- Benzylmethylpyrazolecarboxylic acids, and bromo-, and their derivatives (v. AUWERS and HOLLMANN), A., 847.
- 1-Benzylmethylpyrazoles, and their salts (v. AUWERS and HOLLMANN), A., 847.
- Benzyl-2-methylquinoline ethiodide (MILLS and RAPER), A., 78.
- 4-Benzyl-2-methylcycloelluripentane-3:5-dione 1:1-dichloride (MORGAN), A., 188.
- 4-Benzyl-2-methylcycloelluropentane-3:5-dione (MORGAN), A., 188.
- Benzylmethyl-*p*-toluidine (MEISENHEIMER, GLAWE, GREESE, SCHÖRNING, and VIEWEG), A., 1240.
- Benzylmorphine sulphate, solubility of (DOTT), B., 419.
- C*-Benzyl-naphthols, preparation of (FARB. v. BAYER & Co.), (P.), B., 611.
- Benzyl naphthyl ketones, ω -bromo- and ω -hydroxy- (RUGGLI and REINERT), A., 391.
- α -Benzyl-octioic acid, amide and nitrile of (RAMART), A., 718.
- Benzylacetophenone (BAKER), A., 75.
- 2-Benzyl-oxyanisole, nitro-derivatives (ALLAN and ROBINSON), A., 396; (OXFORD and ROBINSON), A., 397.
- 4-Benzyl-oxyanisole, nitro-derivatives (ROBINSON and SMITH), A., 397.
- 10-Benzyl-oxy-5:10-dihydrophenarsazine (BURTON and GIBSON), A., 419.
- 1-Benzyl-oxy- Δ^1 -cyclohexene oxide (BERGMANN and GIERTH), A., 728.
- 6-Benzyl-oxy-7-(7-hydroxy-6-benzyl-oxy-2-methyl-3:4-dihydroisquinoliniumoxy)-2-methyl-3:4-dihydroisquinolinium iodide (AKABORI), A., 957.
- 6-Benzyl-oxy-2-methyl-3:4-dihydroisquinolinium salts, 7-hydroxy- (AKABORI), A., 957.
- 5-Benzyl-oxy-methyl-5-ethylbarbituric acid (HILL and KEACH), A., 271.
- Benzyl-oxy-methyl-ethylmalonic acid, ethyl ester (HILL and KEACH), A., 271.
- N*-Benzyl-*p*-phenetidine (RIEDEL A.-G.), (P.), B., 771.
- o*-Benzylphenol (FARB. v. BAYER & Co.), (P.), B., 435*.
- o*- and *p*-Benzylphenols as anthelmintics (KROPP, SCHRANZ, SCHULEMANN, and WINTHROP CHEM. CO.), (P.), B., 721.
- p*-Benzylphenoxycetic acid, ω -amino-, ethyl ester, and its hydrochloride (TORRES y GONZALES), A., 609.
- 3-Benzyl-2-phenylbenzo- γ -pyrone, 7-hydroxy-, and dihydroxy-, and their derivatives (BAKER), A., 75.
- Benzyl- β -phenylethylloxidomaleic acid, and its dimethyl ester (BOUGAULT), A., 167.
- Benzylphloracetophenone (BAKER), A., 75.
- Benzylphosphoric acid, metallic salts (ZETZSCHE and NACHMANN), A., 1242.
- 3-Benzylpropionylacetone, and its copper salt (MORGAN), A., 188.
- 2- and 4-Benzylpyridines, *p*-amino-, and *p*-nitro-, salts and derivatives of (KOENIGS, MENSCHINO, and KIRSCH), A., 1162.
- 1-Benzylpyridinium chloride and picrate (MAGIDSON and MENSCHIKOV), A., 844.
- 4-Benzyl-2-pyridone, 3:5-dicyano-6-hydroxy-, and its ammonium salt (LINSTEAD and WILLIAMS), A., 1245.
- N*-Benzylquinrhodine (GRÄNACHER, OFNER, and KLOPFENSTEIN), A., 81.
- 3-Benzyl-2-styrylbenzopyrylium salts, 2-*o*-hydroxy- (LOWENSTEIN and KATZ), A., 956.
- Benzyl styryl ketone, *o*-hydroxy-, and its derivatives (DICKINSON), A., 1144.
- Benzylsulphonazide, action of, with ethyl malonate (CURTIUS and JEREMIAS), A., 415.
- Benzylsulphonylacet-azide, -hydrazide, and -tolulide (CURTIUS and JEREMIAS), A., 416.
- Benzylsulphonylmalonhydrazide, and its hydrazine salt (CURTIUS and JEREMIAS), A., 416.
- Benzylsulphonylmalonic acid, ethyl ester, and its sodium derivative (CURTIUS and JEREMIAS), A., 416.
- Benzylcycloelluripentane-3:5-dione 1:1-dichlorides (MORGAN), A., 188.
- 2-Benzylcycloelluropentane-3:5-dione (MORGAN), A., 188.
- Benzyl- α -tetrahydronaphthalene ketone (RIEDEL), (P.), B., 610.

- 1-Benzyltetrahydroisoquinoline, derivatives of (ROBINSON and WEST), A., 1045.
- 1-Benzyl-2:3:4:5-tetraphenyl- $\Delta^{2:4}$ -cyclopentadien-1-ol (LÖWENBEIN and ULICH), A., 171.
- α -Benzyl-4-thiazaneacetic acid-1-dioxide (LAWSON and REID), A., 80.
- Benzylthiazane oxides, and their hydrochlorides (LAWSON and REID), A., 80.
- 2-Benzylthiol-5-anilinomethylene-4-thiazolidone (DAINS and DAVIS), A., 531.
- 2-Benzylthiol-5-benzylidene-4-thiazolidone (DAINS and DAVIS), A., 531.
- 2-Benzylthiol-6-carbethoxy-1:3:4-thiodiazine, 5-hydroxy- (BOSE), A., 1159.
- 2-Benzylthiol-5-cinnamylidene-4-thiazolidone (DAINS and DAVIS), A., 531.
- 2-Benzylthiol-6-methyl-1:3:4-thiodiazine, 5-hydroxy- (BOSE), A., 1159.
- 2-Benzylthiol-1:3:4-thiodiazine, 5-hydroxy-, and its sodium salt and methyl ether, and 5-hydroxy-2-nitro- (BOSE), A., 1159.
- Benzyltriethylammonium salts (HAGER and MARVEL), A., 1232.
- picrates, and nitro- (GOSS, INGOLD, and WILSON), A., 1133.
- Benzyltrimethylammonium salts, and nitro- (ING and ROBINSON), A., 946.
- bromide (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- Benzyltrimethylammonium salts, chloro- (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- Benzyltri-2-quinolylmethane and its salts (SCHEIBE and FISCHER), A., 528.
- Benzylurethane (BASTERFIELD, WOODS, and WRIGHT), A., 1132.
- α -Benzylvaleric acid, amide and nitrile of (RAMART), A., 718.
- Benzylxanthic acid, esters and amide of (NAMETKIN and KURSANOV), A., 399.
- Benzylxanthyl perchlorate, *p*-chloro- (CONANT and SMALL), A., 158.
- Bergin benzine. See under Benzine.
- Berberine, conversion of, into β -homochelidonine (HAWORTH and PERKIN), A., 417.
- Beri-beri, cause of swelling in (DHAR), A., 426.
- adrenaline content of suprarenals of birds in (Gö), A., 1270.
- of infants, hydrogen-ion concentration and acid-combining power of human milk in (MATSUMOTO), A., 1270.
- Berthierite (STILLWELL), A., 1119.
- Beryl, crystal structure of (BRAGG and WEST), A., 889.
- containing caesium (WILD and KLEMM), A., 594.
- Berylioacetoacetic acid, ethyl ester (WEYGAND and FORKEL), A., 1249.
- Beryllium, preparation of (VIVIAN), A., 1114.
- series spectra of (BOWEN and MILLIKAN), A., 985.
- electrochemistry of (BODFORSS), A., 1212.
- Beryllium alloys with silver, preparation of (BERYLLIUM CORP. OF AMERICA, and COOPER), (P.), B., 952.
- Beryllium compounds, thermochemistry of (MATIGNON and MARCHAL), A., 28, 476.
- influence of, on formation of enzymes (LEHR), A., 434.
- Beryllium salts, complex additive compounds of (FRICKE), A., 368.
- Beryllium carbonate, action of organic acids on (EINHORN), A., 401.
- chloride, preparation of (MATIGNON and CATHALA), A., 260, 486.
- complex compounds of, with amines and nitriles (FRICKE and RODE), A., 694; (FRICKE and HAVESTADT), A., 695.
- hydroxide, reaction of "aluminon" with (MIDDLETON), A., 930.
- compounds of sodium hydrogen carbonate with (BALANDIN), A., 486.
- oxide, mineral occurrence of, and its crystal structure (AMINOFF), A., 227.
- crystal structure of (CLAASSEN), A., 1194.
- specific heat of (MAGNUS and DANZ), A., 1197.
- solubility of, in solutions of its salts (SIDGWICK and LEWIS), A., 787.
- and sulphide, crystal structure of (ZACHARIASEN), A., 562.
- vanadate (EPHRAIM and BECK), A., 371.
- Beryllium organic compounds:—
- Beryllium salts, organic, conductivity of (SIDGWICK and LEWIS), A., 1211.
- ethyl and methyl iodides (DURAND), A., 718.
- Betaine, derivatives of (RENSHAW and HOTCHKISS), A., 1232.
- Betaine-amide. See Trimethylcarboxylamidomethylammonium chloride.
- "Betilon," and its salts (HINTZELMANN, JOACHIMOGLU, and OHLE), A., 288.
- Bettendorff's reaction (ZWICKNAGL), A., 371.
- Beverages, preservation of (SABALITSCHKA), (P.), B., 383.
- dealcoholisation of (CASPAR), (P.), B., 993.
- nearly free from alcohol (MEYER and LÜCKER), (P.), B., 140*.
- aerated, manufacture of (ELIAS), (P.), B., 253*.
- effervescent, production of (RIEDEL A.-G.), (P.), B., 297.
- Bifora radians*, essential oil of (PATER), B., 215.
- Bigitaligenin, and its derivatives (CLOETTA), A., 755.
- Bigitalin, and its derivatives (CLOETTA), A., 755.
- Bile, synthesis and elimination of, in jaundice (BRAKEFIELD and SCHMIDT), A., 538.
- effect of ions on secretion of (HELANZAN), A., 426.
- antiseptic action of acids and sodium salts of unsaturated fatty acids in (KOZLOWSKI), A., 864.
- cholesterol in (STERN and SUCHANTKE), A., 1054.
- detection and determination of, in blood and urine (KLEESATTEL), A., 1169.
- determination of acids and pigments of, in duodenal contents (MCCLURE, VANCE, and GREENE), A., 194.
- Bile acids (WIELAND, SCHLICHTING, and WIEDERSHEIM), A., 400.
- constitution of (BORSCHKE and FRANK), A., 1140.
- behaviour of, in the organism (ADLER), A., 430, 1057; (NEUBAUER), A., 1057.
- effect of administration of, on blood pressure, blood cholesterol, and diuresis (ADLERSBERG and TAUBENHAUS), A., 1273.
- determination of (RAUE), A., 763.
- determination of, in blood (ROSENTHAL and WISLICKI), A., 1184.
- Bile pigments (HAAS, MAURER, and KÜSTER), A., 87.
- formation of, from hemoglobin (MANN, SHEARD, BOLLMAN, and BALDES), A., 634.
- Bile salts, determination of, in blood (LIFSCHÜTZ), A., 763.
- Biliobanin acid, constitution of (BORSCHKE and FRANK), A., 1140.
- Bilirubin, formation of, in the liver (MANN, SHEARD, BOLLMAN, and BALDES), A., 857.
- copper compound, and its benzoyl derivative (HAAS, MAURER, and KÜSTER), A., 87.
- detection of (STERNBERG), A., 752.
- determination of, in physiological fluids (ENRIQUES and SIVÓ), A., 648.
- determination of active hydrogen in (FISCHER and POSTOWSKY), A., 630.
- Binary systems, investigation of (RHEINBOLDT, HENNIG, and KIRCHHEISEN), A., 25.
- melting points of (RHEINBOLDT and KIRCHHEISEN), A., 1001.
- thermal diagrams for (LINARD), A., 475; (RHEINBOLDT and KIRCHHEISEN), A., 476.
- "thaw-melt" diagrams for (RHEINBOLDT and KIRCHHEISEN), A., 908.
- mixed crystal gaps and compounds in solid solutions of (BREDEMEIER), A., 909.
- effect of pressure on equilibria in (PUSHIN and GREBENSCHIKOV), A., 126; (PUSHIN), A., 245, 578.
- influence of substitution on equilibria in (KREMANN, WEBER, and ZEGNER), A., 393; (KREMANN and ZEGNER), A., 394, 396.
- anisotropic, recurrent transition curves in (WEYER, GIANI, and REINECKEN), A., 908.
- Binding materials, manufacture of (GOUTAL and HENNEBUTTE), (P.), B., 732.
- bituminous (VAN WESTRUM), (P.), B., 14.
- Biocatalysts in carbohydrate metabolism (v. EULER and MYRBÄCK), A., 205.
- Biochemistry, electrolysis in (DHÉRÉ), A., 762.
- colour tests in (FEARON), A., 207.
- Biogens (EASTCOTT), A., 324.
- Biolase, fermentation of starch by (PRINGSHEIM and SCHAPIRO), A., 715.
- Biological fluids, electrical conductivity of (BRIGAUDET and CARPENTIER), A., 762.
- Bioluminescence of animal tissues (HARVEY), A., 1060.
- Bioses (EASTCOTT), A., 324.
- reducing, degradation of (ZEMPLÉN), A., 822, 1229; (ZEMPLÉN and BRAUN), A., 1229.
- Biotite, pleochroic haloes in (IMORI and YOSHIMURA), A., 990.
- Birds, cholesterol metabolism in (YAMAGUCHI), A., 860.
- Birefringence in relation to crystalline structure (WIENER), A., 1082.
- 10:10'-Bis-5-acetyl-5:10-dihydrophenarsazine (BURTON and GIBSON), A., 1162.
- Bisalkylxanthenes, purification of (BOEHRINGER & SÖHNE, ROTHMANN, and STEIN), (P.), B., 902.

- $\alpha\delta$ -Bis- [γ -aminopropylamino] butane, and its phosphate (DUDLEY, ROSENHEIM, and STARLING), A., 1128.
- Bis- p -anisyl tellurides (MORGAN and KELLETT), A., 747.
- Bisazo-dyes containing a diphenylcarbamide nucleus (GELLER and NAT. ANILINE & CHEMICAL CO.), (P.), B., 867.
- Bis-1:3-benzodithiole, 2:2'-dihydroxy- (HURTLEY and SMILES), A., 1150.
- 2:2'-Bis-1:3-benzodithiolenes, and its tetraiodo-derivative (HURTLEY and SMILES), A., 1150.
- 2:2'-Bis-1:3-benzodithylium sulphate (HURTLEY and SMILES), A., 1150.
- Bis- p -bromobenzenesulphonylacetone (TRÖGER and PAHLE), A., 524.
- Bis- p -bromophenylphosphoric acid, and its ferric salt (ZETZSCHE and NACHMANN), A., 705.
- $\alpha\delta$ -Bis[γ -aminopropylamino]butane hydrobromide (DUDLEY, ROSENHEIM, and STARLING), A., 1128.
- Bis-(5-carbethoxy-4-methyl- β -3-carboxyethyl-2-pyrryl)methane, and its derivatives (FISCHER and ANDERSAG), A., 1262.
- Bis-(4-carbethoxy-3-methylpyrryl)methene, and its hydrochloride (FISCHER and WIEDEMANN), A., 736.
- Bischlorophenylphosphoric acids, and their salts (ZETZSCHE and NACHMANN), A., 705.
- Bis-2:5-dichlorophenylthiolphenylacetic acid, ethyl ester and nitrile (BROOKER and SMILES), A., 947.
- Bischromenyls, dissociation of (ZIEGLER, FRIES, and SALZER), A., 955.
- Bisdibenzyl ketone thiocarbonyldrazone (STEWART and WILSON), A., 1263.
- Bis-(β -di- n -butylaminoethyl) sulphide, sulphone, and sulfoxide, and their hydrochlorides (LAWSON and REID), A., 80.
- meso- and r - $\alpha\alpha$ -Bisdiethylamino adipic acids, and their derivatives (v. BRAUN, LEISTNER, and MÜNCH), A., 1128.
- Bis-(β -diethylaminoethyl) sulphide, sulphone, and sulfoxide, and their hydrochlorides (LAWSON and REID), A., 80.
- $\alpha\alpha$ -Bisdiethylaminoglutaric acids, and their ethyl esters (v. BRAUN, LEISTNER, and MÜNCH), A., 1129.
- $\alpha\gamma$ -Bisdiethylamino- β -2:4-dinitrophenylpropane, and its picrate (MANNICH and STEIN), A., 166.
- $\alpha\alpha$ -Bisdiethylaminopimelic acids, and their derivatives (v. BRAUN, LEISTNER, and MÜNCH), A., 1129.
- $\alpha\alpha$ -Bisdiethylaminosuberic acids, and their derivatives (v. BRAUN, LEISTNER, and MÜNCH), A., 1129.
- $\alpha\beta$ -Bisdiethylisocindylmethane (v. BRAUN, GOLL, and ZOBEL), A., 740.
- 10:10'-Bis-5:10-dihydrophenarsazine (BURTON and GIBSON), A., 1162.
- Bis-1:3-dimethoxyphenyl 4:4'-ditelluride (MORGAN and DREW), A., 83.
- 4-tellurichloride (MORGAN and DREW), A., 83.
- $\alpha\alpha$ -Bisdimethylamino adipic acid, ethyl ester and its methiodide (v. BRAUN and MÜNCH), A., 1122.
- $\alpha\alpha$ -Bisdimethylaminoazelaic acid, ethyl ester (v. BRAUN and MÜNCH), A., 1122.
- $\alpha\gamma$ -Bisdimethylaminobutyronitrile (BRUYLANTS), A., 826.
- Bis-(β -dimethylaminoethyl) sulphone and sulfoxide, and their hydrochloride (LAWSON and REID), A., 80.
- $\alpha\gamma$ -Bisdimethylamino- β -2:4-dinitrophenylpropane (MANNICH and STEIN), A., 166.
- $\alpha\gamma$ -Bisdimethylamino- α -phenylpropane, and its salts (BRUYLANTS), A., 826.
- Bis-(2:4-dimethyl-3-methylmalonic-pyrrole)-5-methene (FISCHER and NENTZESCU), A., 178.
- Bisdimethylisooxazole zinc chloride (BILLON), A., 500.
- Bis-2:4-di- α -naphthyl-3-phenylchromenyl peroxide (LÖWENBEIN and ROSENBAUM), A., 955.
- Bis-2:3-diphenyl-4-benzylchromenyl (LÖWENBEIN and ROSENBAUM), A., 955.
- Bis-2:4-diphenyl-3:6-dimethylchromenyl (ZIEGLER, FRIES, and SALZER), A., 956.
- Bis-2:4-diphenyl-6-methyl-3-ethylchromenyl (ZIEGLER, FRIES, and SALZER), A., 956.
- Bis-2:3-diphenyl-4-(α -naphthyl)chromenyl, and its peroxide (LÖWENBEIN and ROSENBAUM), A., 955.
- Bis(diphenylvinyl)amine (LIPP, LÜDICKE, KALINOV, and PETKOV), A., 1029.
- Bis(β -dipiperidylethyl) sulphide, and sulphone, and their hydrochlorides (LAWSON and REID), A., 80.
- Bis-(β -di- n -propylaminoethyl) sulphide, sulphone, and sulfoxide, and their hydrochlorides (LAWSON and REID), A., 80.
- Bisethylenediamminocupric dicuprocyanide (MORGAN and BURSTALL), A., 1027.
- 2:6-Bis- α -hydroxybenzylcyclohexanone (VORLÄNDER and KUNZE), A., 1144.
- Bis-[β -4-hydroxycyclohexyl]butanes (CHEM. FABR. VORM. SCHERINO), (P.), B., 720.
- Bis-2-hydroxy-1-methoxyphenyl 4:4'-ditelluride (MORGAN and DREW), A., 83.
- Bisketodihydrothiazine (FINZI and PAGLIARI), A., 310.
- Bismethanolbisethylenediamminocupric cyanate tetrahydrate (MORGAN and BURSTALL), A., 1027.
- 1:1'-Bismenthyl, and its derivatives (CARTER and READ), A., 409.
- 1:1'-Bismenthone (CARTER and READ), A., 409.
- 1:1'-Bismenthylamine, and its salts and derivatives (CARTER and READ), A., 409.
- Bis-2-methoxy- m -tolyl ditelluride (MORGAN and KELLETT), A., 747.
- 2:3:9:10-Bismethylenedioxyanhydroprotoberberineacetone (HAWORTH and PERKIN), A., 965.
- 2:3:9:10-Bismethylenedioxydihydroprotoberberine, and its hydrochloride (HAWORTH and PERKIN), A., 965.
- 2:3:9:10-Bismethylenedioxyoxyprotoberberine (HAWORTH and PERKIN), A., 964.
- 2:3:9:10-Bismethylenedioxyprotoberberine (KITASATO), A., 1160.
- 2:3:9:10-Bismethylenedioxyprotoberberinium chloride (HAWORTH and PERKIN), A., 965.
- 2:3:9:10-Bismethylenedioxytetrahydroprotoberberine, and its hydrochloride (HAWORTH and PERKIN), A., 964.
- Bis-(4-methyl-2-ethyl-3-propionylpyrryl)methane (FISCHER and KLARER), A., 412.
- Bis-(4-methyl-2-ethyl-3-propionylpyrryl)methene, and its salts (FISCHER and KLARER), A., 412.
- Bis(4-methyl-3-ethylpyrryl)methane-5:5'-dicarboxylic acid, ethyl ester (FISCHER and HALBIG), A., 963.
- Bis-[β -3-methyl-4-hydroxycyclohexylpropanes] (CHEM. FABR. VORM. SCHERINO), (P.), B., 720.
- Bismuth, spectrum of (NAOAKA and MISHIMA), A., 1072.
- spectrum of, in a magnetic field (VAN DER HAART), A., 874.
- absorption spectrum of (FRAYNE and SMITH), A., 550; (ZUMSTEIN), A., 650.
- "raies ultimes" in spectrum of (NARAYAN and RAO), A., 767.
- under-water spark spectrum of (BUFFAM and IRETON), A., 1.
- emissivity of, in a magnetic field (HEAPS), A., 784.
- amphoteric ionisation of (PANETH), A., 130.
- surface tension of (SAUERWALD and DRATH), A., 790.
- strength and plasticity of crystals of (GEORGIEV and SCHMID), A., 666.
- effect of, on copper (STAHL), B., 161.
- and its compounds, colloid chemistry of (KUHN and PRSCH), A., 21.
- colloidal (GUTBIER, KAUTTER, and GENTNER), A., 121; (GUTBIER), A., 350; (PAAL and DI POL), A., 676.
- water-soluble, preparation of, for injections (MERCK), (P.), B., 932.
- metallic, toxicity and elimination of (LEONARD), A., 975.
- pyrophoric (VANINO and MENZEL), A., 137.
- Bismuth alloys with mercury, reducing action of (SOMEYA), A., 705, 1116, 1117.
- with silver, electrolysis of (KREMANN and BAYER), A., 802.
- with tin, electrolysis of (KREMANN, KRIEGHAMMER, and TRÖSTER), A., 801.
- Bismuth bases (*bismuthamines*) (VOURNAZOS), A., 371.
- Bismuth compounds, complex (HEPNER and LIKIERNIK), A., 487; (HEPNER), A., 488.
- in blood and serum (BAUER and STRAUSS), A., 92.
- Bismuth salts, pharmacology of (LEONARD; LEONARD and O'BRIEN), A., 975.
- action of, in syphilis (LEVADITI, NICOLAU, SCHOEN, GIRARD, and MANIN), A., 975.
- Bismuth hydrides (WEEKS and DUNN), A., 36; (STRECKER and DANIEL; DRUCE and WEEKS), A., 1113.
- hydroxide, colloidal (PAAL and DI POL), A., 675.
- nitrate, nitration of aromatic compounds with (SPIEGEL and HAYMANN), A., 390.
- nitrites (PICON), A., 36.
- sulphate, compounds of hydrogen chloride and (EPHRAIM), A., 587.
- trisulphide, action of hydrochloric acid on (RAMAHOANDRAN), A., 137.
- vanadate, pure, preparation of (ZINTL and VANINO), (P.), B., 321.

- Bismuth organic compounds (MASCHMANN), A., 311; (SUPNIEWSKI and ADAMS), A., 419.
 manufacture of for therapeutical purposes (STICKINGS and MAY & BAKER, LTD.), (P.), B., 996.
 aromatic (SUPNIEWSKI), A., 966.
 with 7-iodo-8-hydroxyquinoline-5-sulphonic acid (FARBW. FORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 28.
 Bismuth triiodophenol (KNOLL & Co.), (P.), B., 900.
 Bismuth detection, determination, and separation:—
 detection of, in organic material (DANCKWORTT and PFAU), A., 328.
 detection of, in urine (GANASSINI), A., 328.
 determination of (LEONARD), A., 975.
 determination of, colorimetrically (HEINRICH and HERTRICH), B., 372.
 determination of, radiometrically (EHRENBERG), A., 328.
 determination of, in copper (JONES and FROST), B., 633, 671.
 determination and separation of (MOSER and MAXYMOWICZ), A., 264.
 separation of (MANCHOT, GRASSI, and SCHREEBERGER), A., 40.
 separation of, from molybdenite (POKORNY), (P.), B., 496.
 2-Bismuthmercaptobenzoic acid, 4-amino-, preparation of (CHEM. FABR. FORM. SCHERING), (P.), B., 899.
 Bismuthotartaric acid, complex salts (PORTILLO), A., 1025.
 Bis- β -naphtholazothiocarbodibenzidine (ROSSI and CECCHETTI), A., 513.
 Bis-*p*-phenetylacetamide, and its phenylureide (HILL and RABINOWITZ), A., 516.
 Bis-*p*-phenetylbutylamide, and its phenylureide (HILL and RABINOWITZ), A., 517.
 Bis-*p*-phenethylphenylacetamide, and its phenylureide (HILL and RABINOWITZ), A., 516.
 Bis-*p*-phenethylpropionamide, and its phenylureide (HILL and RABINOWITZ), A., 517.
 Bis-*p*-phenethyltelluridichloride (MORGAN and DREW), A., 83.
 Bis-*p*-phenethylvaleramide, and its phenylureide (HILL and RABINOWITZ), A., 516.
 Bis-*p*-phenethylisovaleramide (HILL and RABINOWITZ), A., 517.
 Bisphenolazothiocarbodibenzidine (ROSSI and CECCHETTI), A., 513.
 $\alpha\beta$ -Bis-[γ -phenoxypropylamino]butane hydrobromide (DUDLEY, ROSENHEIM, and STARLING), A., 1128.
 Bisphthalide- α -carboxylic acid, ethyl esters, stereoisomeric (CORNILLON), A., 291.
 Bis(trimethylethylenenitrosates), isomeric (TAYLOR and RINKENBACH), A., 817.
 Bis-2:3:4-triphenylchromenyl (LÖWENBEIN and ROSENBAUM), A., 955.
 Bis-2:3:4-triphenyl-6-methylchromenyl (ZIEGLER, FRIES, and SALZER), A., 956.
 Bis(β -vinylloxyethyl)malonic acid, diethyl ester (CRETCHER, KOCH, and PITTENGER), A., 180.
 Bitumens, refining and decolorisation of (ACHESON), (P.), B., 397.
 heating of, for treatment of roads (RIDGWAY), (P.), B., 364*.
 emulsification of (BILLINGHAM), (P.), B., 655.
 Bituminous compositions (WARREN), (P.), B., 276.
 materials, distillation of (JURA OELSCHIEFER-WERKE and NAGEL), (P.), B., 861.
 continuous carbonisation and cracking of, under pressure (BUBE), (P.), B., 907.
 apparatus for extraction of gas from (HARTMANN and HARTMANN INTERESTS, INC.), (P.), B., 276.
 mixtures for construction of roads, etc. (UNIVERSAL RUBBER PAVIORS and BROWN), (P.), B., 276.
 Biuret, potassium derivatives of (BLAIR), A., 277.
 Biuret reaction with aminohydroxy-compounds (TOMITA), A., 1129.
 Biuretic acid, ethyl ester and amide of (FROMM), A., 716.
 Blackberry. See *Rubus argutus*.
 Blanc fixe (barium sulphate), production of, from barium sulphide (JAHN), (P.), B., 979.
 manufacture of sodium thiosulphate and (CHEM. FABR. GRÜNAU LANDSHOFF & MEYER), (P.), B., 333.
 improved, treatment of barium peroxide to obtain (WEBER, LAPORTE, LTD., and ALCOCK), (P.), B., 666.
 in paints (VAN HOEK), B., 287.
 Blast-furnace plants, increasing the efficiency of Cowper stoves in (HAUTS FOURNEAUX & ACIÈRES DE DIFFERDANGE-Sr.-INGBERT-REMELANGE SOC. ANON. and RIES), (P.), B., 675*.
 Blasting-powder compositions (PRATT and ATLAS POWDER Co.), (P.), B., 854.
- Bleaching, Mohr process of (MOHR; FREIBERGER), B., 534.
 with hypochlorite, influence of soluble silicates on (CARTER), B., 357.
 of bristles (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 11.
 of cellulose, Thorne process for (FUNCKE), B., 481.
 of wood cellulose (WENZL), B., 267.
 of furs (STEIN, AUSTIN, LIEBOWITZ, and STEIN FUR DYEING Co.), (P.), B., 189, 318.
 of hair, bristles, etc. (VENEZIANI), (P.), B., 270.
 or organic materials (HAMBURGER and KAESZ), (P.), B., 437*.
 of silk with sodium hyposulphite (POKORNY), B., 10.
 of artificial silk with "aktivin" (FEIBELMAN), B., 483.
 and removal of size from Bourette silk (KIEN), (P.), B., 873.
 preparation of straw braid for (GEISLER and COMEY BROOKLYN Co.), (P.), B., 189.
 of textile materials (KIESER), (P.), B., 976.
 wound on perforated bobbins (N. V. NEDERLANDSCHE KUNSTZIJDEFABR.), (P.), B., 317.
 of textiles with hypochlorites (I. G. FARBENIND.), (P.), B., 1011.
 by means of ozone (CREPI and OTTO), (P.), B., 357.
 by means of oxygen or ozone baths (MOHR), (P.), B., 403.
 of vegetable fibres (CHEM. FABR. MILCH A.-G.), (P.), B., 872.
 with perborates, catalysis of, with copper and iron compounds (DALSTRÖM), B., 740.
 loose or worked-up (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 663.
 of wool (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 11.
 with hydrogen peroxide (S. E. and E. R. TROTMAN), B., 534.
 with sulphur dioxide (COOK; RAYNES), B., 871.
 silk, and jute, with sulphur dioxide (POLLAIN), (P.), 872.
 damage, determination of, by means of the copper number (WENZL), B., 269.
 Bleaching agents (SOC. ALSACIENNE DE PROD. CHIM.), (P.), B., 153; (CHEM. WERKE HERKULES G.M.B.H. and SCHOLZ), (P.), B., 888.
 Bleaching materials, finely-divided, recovery of oils and fats from (HARBURGER EISEN- u. BRONZEWERKE A.-G.), (P.), B., 637.
 Bleaching-powder, constitution of (NEUMANN and HAUCK), B., 190; (DILTZ and NEUMANN), B., 537.
 production of, by the Backman process (ANGEL), B., 873.
 hydration of lime for manufacture of (RICHARDSON, EMLEY, and PORTER), B., 125.
 chemistry of (OCHI), B., 438.
 stabilisation of (LAMBLE and UNITED ALKALI Co.), (P.), B., 52; (STEPANOV), B., 786.
 commercially packed, deterioration of (McDONNELL and HART), B., 404.
 high-grade (URANO), B., 485.
 Blende, combustion temperature of (BAUMANN), B., 87.
 rotary furnace for roasting (ENKE), (P.), B., 885.
 germanium in (SOUTT), A., 709.
 Blood (KÜSTER, SCHMID, RUFF, HEES, and HUTTENLOCHER), A., 315.
 action of light on (HARRIS), A., 635.
 absorption spectra of colouring matters of (STRUB), A., 776.
 optical activity and reducing power of filtrates of (ANDERSON and CARRUTHERS), A., 861.
 effect of irradiation of, on the electrophoretic potential (FALK and REED), A., 431.
 hydrogen-ion concentration of (BAYLISS, KERRIDGE, and VERNEY), A., 872; (ETIENNE, VERAINE, and BOURGUAUD), A., 1067.
 representation of (GUILLAUMIN), A., 854.
 in plasma or serum (AUSTIN, STADIE, and ROBINSON), A., 422.
 influence of temperature on (MARTIN and LEPPER), A., 1165.
 influence of hydrogen-ion concentration on surface tension of (JENDRASSIK and GELDRIE), A., 969.
 equilibria of gases and electrolytes in (VAN SLYKE, HASTINGS, MURRAY, and SENDROY), A., 85.
 measurement of pressures of gases of (POULTON, SPURRELL, and WARNER), A., 648.
 effect of hepatic extracts on pressure of (JAMES, LAUGHTON, and MACALLUM), A., 319.
 action of metallic salts on decomposition of hydrogen peroxide by (BLEYER), A., 86.
 absorption of hydrogen sulphide by (DESGREZ, BIERRY, and LESCEUR), A., 750.
 oxygen-, acid-, and base-combining properties of (STADIE and ROSS), A., 854.

- Blood, acid-base-protein equilibrium and carbon dioxide absorption** in (STADIE, AUSTIN, and ROBINSON), A., 422.
- acid-base equilibrium of**, in hæmorrhage (BENNETT), A., 1165.
- action of calcium salts on the acid-base equilibrium in** (HOLLÓ and WEISS), A., 85.
- effect of carbon tetrachloride and of alcohol on acid-base balance of** (LAMSON and WING), A., 1058.
- and plasma in children, acid-combining power of** (CSAPÓ and MIHALOVICS), A., 192.
- glycolysis in** (RONA and IWASAKI; HOLBOLL; VIVIANI), A., 1051.
- residual reduction of** (EGE), A., 854; (VAN SLYKE and HILLER), A., 855.
- reducing power of**, *in vitro* (SLUITER and KOK), A., 969.
- effect of intravenous injections of various substances on** (HÄNZLIK, DE EDS, and TANTER), A., 319.
- effect of the thyroid on growth factors in** (ASHER and UCHIDA), A., 206.
- coagulation of** (RABINOVITCH), A., 1267.
- role of calcium in** (LOUCKS), A., 536.
- treated with citrates or phosphates, coagulation of**, by lævulose and magnesium salts (SLUITER), A., 123.
- relationship of constituents of**, to those of cerebrospinal fluid of (KUBIE and SHULTS; PUCHER and BURD), A., 315.
- in diabetes, protein-fat ratio in** (CHRISTENSEN), A., 637.
- changes in**, during digestion (MORGULIS), A., 428.
- changes in**, after duodenal fistula (WALTERS, KILGORE, and BOLLMAN), A., 637.
- change in the chloride concentration of**, in gastric secretion (LIM and NI), A., 315.
- in leprosy** (PARAS), A., 1054.
- changes in**, in narcosis (TÓMASSON), A., 642.
- in pneumonia** (BUCKMAN, ADAMS, SMITH, and EDWARDS), A., 1054.
- phosphorus in**, in tuberculosis (McCLUSKEY), A., 860.
- changes in**, in whooping cough (REGAN and TOLSTOUHOV), A., 538.
- influence of hormones on fat content of** (FLEISCH), A., 1278.
- effect of insulin on fat of** (WHITE), A., 205; (ONOHARA), A., 206.
- new constituent of** (HUNTER and EAGLES), A., 85.
- inorganic constituents of** (KERR), A., 634.
- in tropical regions and in avitaminosis, constituents of** (VAN BERKHOUT), A., 85.
- action of insulin on constituents of** (KAUFFMANN-COSLA and ROCHE; GIGON), A., 1063.
- acetaldehyde in** (GEE and CHAIKOFF), A., 1179.
- amino-acids in**, in melanodermitis (LOEPER, OLLIVIER, and LESURE), A., 1054.
- fate of** (SCHLOSSMANN), A., 1171.
- amino-acids and polypeptides in**, in pregnancy and childbirth (SCHLOSSMANN), A., 860.
- amino-nitrogen of**, in experimental fevers (DONATH and HEILIG), A., 859.
- ammonia in** (PARNAS and KLISIECKI), A., 536, 855; (ADLERSBERG and TAUBENHAUS), A., 855; (KLISIECKI), A., 968.
- ammonium salts in** (FONTÈS and YOVANOVITCH), A., 85; (FONTÈS), A., 968.
- argon in** (HACKSPILL, ROLLET, and NICLOUX), A., 536.
- calcium in** (KYLIN), A., 1169.
- effect of adrenaline on** (PULAY and RICHTER), A., 1179.
- effect of light on** (REED and TWEEDY), A., 541.
- effect of parathyroid extracts on** (BERMAN), A., 326.
- action of parathyroid extract on** (CAMERON and MOORHOUSE), A., 1180.
- effect of radiation on calcium and potassium in** (PINCUSSEN and MAKRIEONS), A., 90.
- variations in carbon dioxide in** (TANGL), A., 968.
- catalase in**, effect of altitude on (ALEXEEV), A., 855.
- chlorides in**, with varying conditions of gastric secretion (KASSIRSKY), A., 752.
- effect of histamine on** (DRAKE and TISDALL), A., 430.
- chlorine content of**, in pernicious anemia (HADEN), A., 859.
- cholesterol in**, in ether anæsthesia (MAHLER), A., 1172.
- cyanates in** (GOTTLEB), A., 421.
- distribution of dextrose in** (RONA and SPERLING), A., 1166.
- isomeride of dextrose in** (VISSCHER), A., 536.
- disappearance of dextrose from** (DU VIGNEAUD and KARR), A., 192.
- diastase in**, after removal of the pancreas (MARKOWITZ and HUGH), A., 426.
- Blood, enzymes of** (PINCUSSEN and COELHO), A., 94; (PINCUSSEN and SELICSOHN; PINCUSSEN; KULTJUGIN), A., 432.
- in sympathicotonia** (SOROCIOVITCH), A., 538.
- apparatus for analysis of gases in** (GUTHRIE), A., 1184.
- transport of oxygen and carbon dioxide by hæmocyanin in** (REDFIELD, COOLIDGE, and HURD), A., 1050.
- effect of age on hæmoglobin in** (WILLIAMSON and ETS), A., 968.
- hæmoglobin and iron in** (SACKETT), A., 1165.
- hexosephosphoric acid in normal and diabetic** (LAWACZECK), A., 752.
- ketonic substances of** (v. FAZEKAS), A., 536.
- lactic acid in** (COLLAZO and SUPNIEWSKI), A., 315; (BINET and COLLAZO), A., 421.
- effect of metallic salts on lipase in** (WALBUM and BERTHEISEN), A., 202.
- lipins in** (GRIGAUT, DEBRAY, and FURSTNER), A., 317; (GORTER and GRENDL), A., 855.
- effect of pregnancy on** (TYLER and UNDERHILL), A., 199.
- lipoids in** (OSER and KARR), A., 317.
- residual nitrogen in** (KLEIN), A., 318.
- in relation to kidney function** (BERGLUND), A., 971.
- effect of addition of sodium oleate on nitrogen in** (ROSENTHAL), A., 1165.
- phenol in** (BECHER, LITZNER, and TÄGLICH), A., 752.
- during kidney inefficiency** (BECHER and LITZNER), A., 1054.
- variations of phosphates in** (HAYARD and REAY), A., 192.
- influence of exercise on the inorganic phosphates of** (HAYARD and REAY), A., 428.
- phosphates and sugar in** (HARTMAN and BOLLINGER), A., 317.
- distribution of phosphorus in** (POSTERNAK), A., 536; (RONA and IWASAKI), A., 1051.
- effect of fatigue on phosphorus compounds of** (CUTHBERTSON), A., 198.
- proteins of** (HUECK), A., 86.
- hydrolytic products of** (STRAUSS), A., 753.
- acetylation of** (TROENSEGAARD and KOUDAH), A., 634.
- effect of secretion of gastric juice on sodium chloride in** (SINDERLER), A., 858.
- sugar in** (HARNED), A., 85; (LUND and WOLF), A., 635; (BOCK, SCHNEIDER, and GILBERT), A., 635, 968; (BARRENSCHEEN and EISLER; BARRENSCHEEN, DOLESCHALL, and POPPER; BARRENSCHEEN and BERGER), A., 1270.
- reduction and rotation of** (BARRENSCHEEN, KAHLER, and HIEHL), A., 423.
- effect of photoactive substances on** (VOLLMER and LEE), A., 856.
- combined** (BUFANO), A., 351, 1051.
- effect of ammonia on** (HORVATH), A., 1267.
- effect of calcium and potassium on** (STERKIN), A., 968.
- effect of dihydroxyacetone on** (MASON), A., 1054.
- action of enzymes on** (GIAJA and CHAIKOVITCH), A., 635.
- effect of insulin on** (HYND), A., 205; (JOHN), A., 979; (MÜLLER; HARRIS, LASKER, and RINGER), A., 1180.
- in insulin hypoglycæmia** (ERNST and FÖRSTER), A., 546.
- in health, diabetes and insulin hypoglycæmia** (GLASSMANN), A., 1169.
- effect of phosphates on** (FRIEDLÄNDER and ROSENTHAL), A., 752.
- effect of sodium arsenite on** (VAN DYKE), A., 92.
- nerve irritability in relation to** (GREISHEIMER), A., 1051.
- physiology of**, and its determination (GLASSMANN), A., 192.
- effect of anaphylaxis on sugar and lactic acid in** (McCULLOUGH and O'NEILL), A., 192.
- labile sulphur in** (CAMPBELL and GEILING), A., 1165.
- sulphur containing compound, thiasine, in** (BENEDICT, NEWTON, and BEHRE), A., 421.
- urea-nitrogen in** (TASHIRO), A., 856.
- uric acid in** (WEATHERS and SWEANEY), A., 856.
- effect of light on** (KOCH and REED), A., 319.
- uric acid content of**, and presence of urico-oxydase (FLATOW), A., 1166.
- charcoal from** (EHRENBURG), A., 192.
- treatment of**, for use in making artificial horn (STERNBERG), (P.), 335.
- capillary, hydrogen-ion concentration of** (SCHAEFER), A., 422; (MARTIN and LEPPER), A., 442.
- normal and pathological, carbon-nitrogen quotient of** (GOMEZ), A., 425.
- postmortem, changes in composition of** (PAUL), A., 1054.

- Blood of various animals, coagulation of serum from (REINER, PLUHÁK, and HÁNYŠ), A., 751.
 calves, on milk diet (HUFFMAN and ROBINSON), A., 968.
 of cows and calves, composition of (ROBINSON and HUFFMAN), A., 421.
 of splenectomised dogs, behaviour of dyes in (FARKAS and TANGL), A., 1269.
 horse's, oxyhaemoglobin and associated metallic constituents in (DESOREZ and MEUNIER), A., 191.
 human, distribution of non-electrolytes between corpuscles and plasma of (LUNDGAARD and HOLBØLL), A., 855.
 phosphorus partition in (ROLLER), A., 1267.
 of men and women, differences between (KLISIECKI), A., 1267.
 of the new-born (SHERMAN, PUCHER, and LOHNES), A., 318.
 ox, composition of (HUFFMAN and ROBINSON), A., 421, 968.
 rabbits, permeability of red corpuscles of (IRVING and KAY), A., 421.
 changes in, on diet of soya beans (HORVATH), A., 861.
 of women, uric acid and non-protein nitrogen in (OKEY and ERIKSON), A., 973.
- Blood detection and determination:—
 preservation of, for analysis (CAMERON and WILLIAMSON), A., 211.
 measurement of, with a pipette (ERNST and WEISS), A., 443.
 Abderhalden's reaction for (SELLHEIM), A., 86.
 diazo and urochromogen reactions of, in renal insufficiency (BECHER), A., 426.
 determination of sex by Manóilov's reaction for (GALWIAŁO, VLADIMIROV, VINOGRADOV, and OPPEL; SCHMIDT and PEREVOSSKAYA), A., 1165.
 detection of (STAMMERS), A., 854.
 detection of, by the Kastle-Meyer reaction (GLAISTER), A., 1165.
 detection of, in faeces (SOHUMI and DANKMEIER), A., 317.
 detection of, in presence of yeast or plant seeds (SCHUMM), A., 314.
 detection of variation in acid content of (GOLLWITZER-MEIER), A., 1050.
 detection and determination of bile in (KLEESATTEL), A., 1169.
 determination of total (PETRÁNYI), A., 762.
 determination of acetone substances in (BEHRE and BENEDICT), A., 1282.
 determination of alcohol in (AOKI), A., 1067.
 determination of bases in (STADIE and ROSS), A., 100.
 determination of bile acids in (ROSENTHAL and WISLICKI), A., 1184.
 determination of bile salts in (LIFSCHÜTZ), A., 763; (SZILÁRD), A., 872.
 determination of calcium in, in presence of strontium (FAY), A., 872.
 determination of carbon monoxide in (SAYERS and YANT), A., 100.
 determination of chlorides in, in presence of proteins (CLAUDIUS), A., 211.
 determination of chlorine in (REHBERG), A., 984.
 determination of cholesterol and lecithin in, colorimetrically (DE TONI), A., 1283.
 determination of ethylene in (NICLOUX), A., 1058.
 determination of fat in, by Bang's method (LÖW), A., 1283.
 determination of gases in (VAN SLYKE), A., 443.
 determination of guanidine substances in (KÜHNAU), A., 1054.
 determination of haemoglobin in (ITHURRAT and MORERA), A., 1267.
 determination of iodine in (v. BODÓ), A., 328.
 determination of lactic acid in (MENDEL and GOLDSCHIEDER), A., 212; (FREJKA and VŠETEČKA), A., 327; (VAS and LANG), A., 1067; (BREHME and BRAHDY), A., 1282.
 determination of lipins in, by Bang's method (FLEISCH), A., 1283.
 determination of lipins in, nephelometrically (BLIX), A., 442.
 determination of nitrogen in (FOIT), A., 648.
 determination of phosphorus in (ROE, IRISH, and BOYD), A., 763; (MACHEBEUFF), A., 1067.
 determination of sugar in (KOMM), A., 100; (DUGGAN and SCOTT), A., 442; (OSER and KARR; FAZEKAS; BISSINGER), A., 443; (FOLIN), A., 648; (TERVAERT; KRUYSSSE), A., 763; (GOTO and OSAWA; LYTTLE and HEARN; ROCKWOOD; BENEDICT), A., 984; (STAMMERS; WRIGHT; JOHN), A., 1067; (BYRD), A., 1184; (FOLIN and SVEDBERG), A., 1282.
 determination of sugar in, by Bang's method (COHN and WAGNER), A., 211.
- Blood detection and determination:—
 determination of sugar in, electrometrically (MISLOWITZER), A., 442.
 determination of sugar in, by Ilagedorn and Jensen's method (KAUFMANN), A., 327.
 determination of urea in (POHORECKA-LELESZ), A., 212; (C. and S. AUGUSTE), A., 648; (CLARK and COLLIF; PÉCHON), A., 763; (BOIVIN; COOPER), A., 1067.
 determination of urea in, by means of the mercury-combining power (HENCH and ALDRICH), A., 1271.
 determination of uric acid in (HUNTER and EAGLES), A., 85; (REIF), A., 212; (IONESCU, BIBESCU, and POPESCU), A., 443; (BROWN), A., 763; (HOLBROOK and HASKINS), A., 1184; (FLATOV; CLARK and DE LORIMIER), A., 1283.
- Blood-corpuscles, effect of, concentration of cations on osmotic resistance of (SIMON), A., 535.
 permeability of (BLUM, DELAVILLE, and JONES), A., 421.
 glycolytic action of (IRVING), A., 854.
 red, equilibrium and osmosis between serum and (WU), A., 1165.
 conservation of, and their sensitivity to poisons (LAVES), A., 191.
 agglutination of (OLIVER and SMITH), A., 243.
 gaseous metabolism of, at high altitudes (FÖRSTER; FRITZ), A., 535.
 adsorption of amino-acids by, and its effect on nitrogen distribution (HÄUSLER), A., 1165.
 changes in potassium content of (KERR), A., 634.
 human, dextrose content of (TEDESCO), A., 65.
 white, oxidative enzymes of (MIELKE), A., 536.
 effect of drugs on (FORTI), A., 968.
 in natural and separated cream (HEKMA), B., 337.
- Blood-pigments (SCHUMM), A., 87, 193, 1268; (HAUROWITZ), A., 314.
 degradation of (FISCHER and TREIBS), A., 1256.
 porphyrins from (PAPENDIECK), A., 312.
 action of potassium ferriocyanide on (NICLOUX and ROCHE), A., 191.
- Blood-plasma, photo-oxidation of (HARRIS), A., 635.
 acid-base equilibrium in (PETERS, BULGER, EISENMANN, and LEE), A., 422.
 effect of morphine on ions in (CLOETTA and BRAUCHLI), A., 431.
 phosphoric esters in (MARTLAND and ROBISON), A., 968.
 determination of hydrogen-ion concentration of (BENNETT), A., 1165.
 human, protein groups in, and the citrated plasma (STARLINGER), A., 442.
- Blood-serum, composition of (HANDOVSKY), A., 1057.
 ultra-violet absorption spectrum of (STENSTRÖM and REINHARD), A., 422.
 pK' in the Henderson-Hasselbalch equation for (CULLEN, KEELER, and ROBINSON), A., 192.
 distribution of ions in (RONA and MELLI), A., 315.
 determination of molecular concentration of, by distillation (HRYNAKOVSKI and RYCHTER), A., 211.
 physical, colloidal, and chemical properties of (PETSCHACHER, RITTMANN, and GALEHR), A., 1166.
 unknown acid in (MOND and NETTER), A., 192.
 solubility of calcium salts in (IRVING), A., 855.
 influence of calcium salts on the calcium of (HJORT), A., 86.
 inorganic constituents of, in disease (PINCUS, PETERSON, and KRAMER), A., 971.
 influence of mineral acids or extirpation of suprarenals on inorganic cations in (KEITEL), A., 1058.
 relation between lipolytic power and cholesterol content of, in hypertonia (DÖRLE and v. WEISS), A., 426.
 potassium and calcium in, in disease (KYLIN), A., 1053.
 specific refraction of proteins of (SCHRETTTER), A., 1267.
 sulphate content of (HEUBNER and MEYER-BISCH), A., 1167.
 vaso-constrictor substances of (BORGERT and KEITEL), A., 1051.
 of children, alkali content of (CSAPÓ), A., 425; (CSAPÓ and HENSZELMANN), A., 634.
 human, electrodialysis of (BERNHARD and BEAVER), A., 969.
 influence of proteins on the conductivity of (ATCHLEY and NICHOLLS), A., 86.
 viscosity of proteins of (STARLINGER and HARTL), A., 86.
 determination of proteins in (STARLINGER and HARTL), A., 211.

- Blood-serum, determination of calcium salts in (TREVAN and BAINBRIDGE), A., 762; (ROE and KAHN), A., 763.
- Body, animal, autoprocolysis of the entire (STEFFUHN, PEWSNER, and TIMOFEEVA), A., 1174.
- Body fat, effect of mineral content of diet on (ONOHARA), A., 197.
- Body fluids, calcium in (MARRACK and THACKER), A., 855.
- Boilers, prevention of adhesion of scale in (SCHNETZER), (P.), B., 113.
- high-pressure, discharge of liquids from (FARB. v. BAYER & Co.), (P.), B., 304.
- low-pressure, comparative value of bituminous coal and coke as fuel for (AUGUSTINE, NEIL, and MYLER), B., 347.
- Boiler feed water. See under Water.
- Boiler sludge, purification of, and heating and supply of feed water (NECKAR WATERREINIGER MAATS. and HERINGA), (P.), B., 518.
- Boiler tubes, influence of segregation on corrosion of (WOODVINE and ROBERTS), B., 471, 855.
- Boiling point, relation of constitution to (ADAMS), A., 568.
- of higher aliphatic hydrocarbons (FRANCIS and WOOD), A., 816.
- Boiling rod to prevent bumping (SCOLES), A., 815.
- Boldine, constitution and derivatives of (WARNAT), A., 185.
- dimethyl ether, identity of glaucine and (WARNAT), A., 311.
- Bones, mineral structure of (DE JONG), A., 781.
- inorganic constituents of (HOWLAND, MARRIOTT, and KRAMER), A., 969.
- extraction of fat from (HJORT), (P.), B., 372.
- glue from (KERNOT and SPEER), B., 557.
- extraction of glue and fat from (SHEARMAN), (P.), B., 377.
- hydrolysis of hexosophosphoric acid by extracts of (FUJIHARA and KOKEN), A., 1176.
- determination of calcium, magnesium, phosphates, and carbonates in (KRAMER and HOWLAND), A., 1068.
- Bone meal, degreasing and chlorination of (BOORNE), (P.), B., 989.
- for medicaments, preparation of (RASKA), (P.), B., 218.
- Borates and Boric acid. See under Boron.
- isoBorneol, production of, from camphene and oils (GAMMAY), (P.), B., 995.
- Borneols, catalytic action of reduced copper on (MASUMOTO), A., 175.
- isomeric, and their esters (VAVON and PEIGNIER), A., 1042.
- α - and iso-Borneols, and their esters, rotation of (PEIGNIER), A., 1081, 1251.
- manufacture of esters of (CHEM. FABR. VORM. SCHERING), (P.), B., 932, 995.
- naphthylurethanes from (BICKEL and FRENCH), A., 517.
- isoBorneolcarboxylic acid. See Camphanecarboxylic acid, 6-hydroxy-.
- Bornyl chloride, conversion of, into camphene (DUPONT and BRUS), (P.), B., 932.
- esters, production of, from pinenes (ISAJEV), (P.), B., 608.
- picrate, compounds of alcoholic alkali hydroxides with (DELÉYNE and GRANDPERRIN), A., 842.
- isoBornyl esters, preparation of (EBERT, DEHLS, and STEIN), (P.), B., 28.
- 2-Bornylamino-1:6:8-trinitronaphthalene (VAN DER KAM), A., 1240.
- Bornylaniline, 2:4-dinitro- (VAN DER KAM), A., 1240.
- Boracetic anhydride as a reagent (DIMROTH), A., 297.
- Borodisalicylic acid (DIMROTH), A., 298.
- Boron, atomic weight of (BRISCOE, ROBINSON, and STEPHENSON), A., 219.
- and its nitride, specific heats of (MAGNUS and DANZ), A., 1197.
- production of substances containing carbon and (PODSZUS), (P.), B., 539*.
- effect of, on aluminium and its alloys (HAENNI), B., 58.
- influence of, on plants (CUSUMANO), B., 764.
- Boron alloys, analysis of (TSCHISCHEVSKI), B., 634.
- with iron (PACZ and GEN. ELECTRIC CO.), (P.), B., 18*.
- Boron compounds, stereochemistry of (BÖESEKEN), A., 283.
- Boron trifluoride, equilibrium of hydrogen sulphide with (GERMANN and BOOTH), A., 475.
- hydrides, and their derivatives (STOCK and POHLAND), A., 1217; (STOCK), A., 1218.
- trioxide, specific heat of (SAMSOEN and MONDAIN-MONVAL), A., 567.
- density of (BRISCOE, ROBINSON, and STEPHENSON), A., 219, 569.
- influence of, on chemical and heat-resisting glasses (TURNER and WINKS), B., 238, 584.
- Boron:—
- Boric acid, variation of the dissociation constant of, with concentration (KOLTHOFF), A., 907.
- influence of, on electrolytic dissociation of electrolytes (KOLTHOFF), A., 681.
- influence of, on rotation of tartaric acid (DARMOIS), A., 1201.
- effect of hydroxy-compounds on conductivity of (BÖESEKEN and MEUWISSEN), A., 801.
- effect of trimethylglycerose on conductivity of (BÖESEKEN and DOMMISSE), A., 818.
- determination of structure of organic compounds by means of (BÖESEKEN and COOPS), A., 681.
- complex compounds of, with organic hydroxy-acids and their dissociation (KOLTHOFF), A., 1206.
- complex compounds of, with polyhydric alcohols (KOLTHOFF), A., 25.
- complex compounds of malic acid and (DARMOIS), A., 337.
- action of, on alkali carbonates (VANZETTI), A., 249.
- Orthoboric acid, volatility of, in steam (NASINI), A., 787.
- Borates, basic, electrometric precipitation of (BRITTON), A., 246.
- Perborates, preparation of, electrolytically (STEPANOV), B., 786.
- regeneration of electrolytic liquor from the electrolytic production of (HENKEL & Co. and JACOBI), (P.), B., 876.
- stabilisation of solutions of (KARSTEN-SALMONY), B., 537.
- detection of, in presence of borates (ROSSI), B., 404.
- Borosilicates, deformation study on (LU), B., 240.
- Boron sulphide, preparation of (TIEDE and THIMANN), A., 1112.
- Boron minerals, treatment of (KELLY and BORAX CONSOLIDATED, LTD.), (P.), B., 666*.
- Boronia citriodora, essential oil of (PENFOLD), B., 803.
- Botelho's reaction (FALUDI), A., 88.
- Brachychiton populneum. See "Kurrajong."
- Brain, chemical topography of (GORODISSKY), A., 194.
- periodicity of constituents of, with age (EIHRENBURG), A., 193.
- reducing substances in alcoholic extracts of (E. G. and B. E. HOLMES), A., 857.
- acid from cerebroside (KLENK), A., 1124.
- influence of drugs on liberation of phosphoric acid from the surviving pulp of (STAMM), A., 431.
- decomposition of sugars in (WOHLGEMUTH and NAKAMURA), A., 1055.
- ox, sugar residue from cerebroside (PRYDE and HUMPHREYS), A., 969.
- Bran, mineral metabolism of horses fed on (BANG), A., 1056.
- manufacture of food from (KELLOGG and KELLOGG Co.), (P.), B., 106.
- Brass, production of, from mixed ores (GUERTLER), B., 829.
- working of, at high temperatures (HANSER), B., 830.
- technology of pressed bars of (KÖSTER), B., 750.
- formation of oxide films on, in air (VERNON), A., 1108.
- action of cuprous chloride on (MASING and MIRTHING), A., 486.
- loss of zinc by, in corrosion (MASING and KOCH), B., 325.
- alloy (HEUSLER and ISABELLENHÜTTE GES.M.B.H.), (P.), B., 675*.
- articles, coloration of (STAHLSCHEIDT), (P.), B., 952.
- condenser tubes, corrosion of (v. SCHWARZ), B., 411.
- nickel (SMALLEY), B., 58.
- heat treatment of (OSTROGA), B., 161.
- scrap and residues, recovery of copper from (LEWIN), (P.), B., 369.
- determination of zinc oxide in (EVANS and RICHARDS), B., 279, 792*.
- α - and β -Brass, optimum temperature for extrusion of (SCHREITER), B., 919.
- γ -Brass, structure of (BRADLEY and THEWLIS), A., 1084.
- Brassica campestris, oil from seeds of (SUDBOROUGH, WATSON, AYYAR, and DAMLE), B., 954.
- Brassica juncea, oil from seeds of (SUDBOROUGH, WATSON, AYYAR, and MASCARENHAS), B., 954.
- Brassica napus, carbon dioxide in juice from seeds of (v. EULER), A., 208.
- Brassicic acid, thallos salt (WALTER), A., 712.
- Brassylic acid, methyl ester (NOLLER and ADAMS), A., 712.
- Brazilin, synthesis of, and its derivatives (PERKIN, RAY, and ROBINSON), A., 732.
- Bread, making of (HEWITT and BRIT. ARKADY CO., LTD.), (P.), B., 689* ; (D'ARBOUET), B., 993.
- addition to yeast in (FISKE and RUMFORD CHEM. WORKS), (P.), B., 1027.

- Bread, chemistry of (DEARSLY), B., 73.
 fat content of (CORMACK), A., 1183.
 nutrition value of, for nitrogen equilibrium (ROSE and MACLEOD), A., 428.
 nutritive value of protein of (HINDHEDE), A., 762.
 dough, preparation of (LOWY), (P.), B., 74.
 leavened, manufacture of (HOFFMAN and FLEISCHMANN Co.), (P.), B., 607; (KOHMAN, IRVIN, and FLEISCHMANN Co.), (P.), B., 848.
 containing silica, manufacture of (SEFTNER), (P.), B., 383.
 determination of age of (PEPER), B., 418.
 determination of degree of milling of flour in (KALNING), B., 563.
 Breithauptite, structure of (DE JONG), A., 460.
Brevoortia tyrannus, influence of asphyxiation on blood of (HALL, GRAY, and LEPOVSKY), A., 634.
 Brewing in relation to other fermentation industries (FERNBACH), B., 961.
 hydrogen ions in (HAGUES), B., 210.
 use of lactates in (MURPHY), (P.), B., 251.
 Bricks, composition for manufacture of (BACKHOUSE and OLIVER), (P.), B., 1015.
 binding material for (FABRE), B., 790.
 burning of (RIDGE), (P.), B., 362.
 balance for measuring the bulk volume of (WESTMAN), B., 632.
 fire-proof, production of (SIEURIN), (P.), B., 1016.
 checker, for water-gas carburettors (PARMELEE and WESTMAN), B., 632.
 lime-silica (DE FAZI), B., 980.
 manufacture of (COUTANT), (P.), B., 409.
 effect of burning on the structure and properties of (HUGILL and REES), B., 916.
 porous or containing metals or metal oxides, manufacture of (EURENBERG, WIEDERHOLD, KRUG, HOLSBOER, FISCHER, and STUDIENGS F. AUSBAU DER IND.), (P.), B., 364.
 refractory, manufacture of (PFÄLZISCHE CHAMOTTE- & THONWERKE and WAGAPOFF), (P.), B., 917.
 unburned (YOUNGMAN and HARRISON-WALKER REFRACTORIES Co.), (P.), B., 192; (YOUNGMAN), (P.), B., 441*.
 determination of porosity of (ESSER and PIVOVARSKI), B., 522.
 silica, manufacture of (NORTH), (P.), B., 241.
 thermal expansion of (TRAVERS and DE GOLOUBINOV), B., 274.
 from coke-oven walls (COLE), B., 489.
 dilatometric analysis of raw materials for (TRAVERS and DE GOLOUBINOV), B., 361.
 Brine, preparation of, free from gypsum (SALZBERGWERK NEUSTASSFURT), (P.), B., 322.
 evaporation of (MASCHINENBAU-A.-G. BALCKE), (P.), B., 322; (MUMFORD and AMER. TRONA CORP.), (P.), B., 743.
 use of soaps and colloids for purification of (WALTER), B., 582.
 removal of calcium and magnesium from (FREETH, MUNRO, and SOLVAY PROCESS Co.), (P.), B., 823*.
 Briquettes (TYRRELL), (P.), B., 698; (SPENCER and SEYDEL CHEMICAL Co.), (P.), B., 812.
 manufacture of (EDSER, BEASLEY, and MINERALS SEPARATION N. AMER. CORP.), (P.), B., 41*; (BEAUDEQUIN), (P.), B., 815*; (ILLINGWORTH, and ILLINGWORTH CARBONIZATION Co.), (P.), B., 1003.
 effect of sulphur in manufacture of, from sub-bituminous coal (BENSON, BORGLIN, and ROUKE), B., 256.
 binding material for (BRIKETTHARZ-GES.), (P.), B., 182.
 coal, manufacture of (GUILLEMET), (P.), B., 182; (BEAUDEQUIN), (P.), B., 815*.
 fuel (FRANKENSTEINER MAGNESITWERKE and KATTNER), (P.), B., 4, 479*; (GOSKAR), (P.), B., 6*; (WOOD and MINERALS SEPARATION; MIDLAND COAL PRODS. and INGMAN), (P.), B., 37; (WEBER), (P.), B., 42*; (PARKER and AMER. BRIQUET Co.), (P.), B., 117; (WELTON), (P.), B., 181, 182, 232*; (MARCESCHIE), (P.), B., 261; (O'DONNELL), (P.), B., 263*; (BEAUDEQUIN), (P.), B., 349; (SUTCLIFFE), (P.), B., 428; (DELZEIT and LEHIGH COAL & NAVIGATION Co.), (P.), B., 860.
 binders for (GOODWIN and WHITE), B., 34; (CARPENTER and WHITE), (P.), B., 146.
 ovoid, carbonisation of, in vertical retorts (GEVERS-ORBAN), (P.), B., 37.
 Briquettes from powdered fuels (KOLLÁR), (P.), B., 308; (TILLBERG), (P.), B., 860.
 lignite (FERNHOLTZ and FERNHOLTZ MACHINERY Co.), (P.), B., 428.
 removal of dust in manufacture of (SIEMENS-SCHUCKERTWERKE and HAIN), (P.), B., 261.
 peat (STEINERT), (P.), B., 308.
 wood (HOLDAWAY, PIKE, and FLICKINGER), (P.), B., 621.
 Bristles, bleaching of. See under Bleaching.
 Bromellite (AMINOFF), A., 227.
 Bromides. See under Bromine.
 Bromination of organic compounds (ZMACZYNSKI), A., 604.
 Bromine, occurrence of, in rocks and minerals (v. FELLEBERG and LUNDE), A., 1022.
 extraction of, from solutions (MORESCHI), B., 875; (VELLARDI and A.P.I.C.E. Soc. AN PROD. ITALIANI CHIMICI ESTRATTIVI), (P.), B., 916.
 synthesis of, from calcium and potassium in the X-ray tube (LORING), A., 656.
 photochemical properties of (PLOTNIKOV and KARSCHULIN), A., 1014.
 Budde effect in (LEWIS and RIDEAL), A., 484.
 absorption spectrum and heat of dissociation of (KUHN), A., 1192.
 arc spectrum of (TURNER), A., 550; (HORI), A., 874.
 band spectra of (NAKAMURA), A., 882.
 vapour, fluorescence of (DAURE), A., 884.
 light-excited, reactions caused by (EGGERT, WACHHOLTZ, and SCHMIDT), A., 135.
 photochemical action of, with cinnamic acid and with stilbene (GHOSH and PURKAYESTHA), A., 366.
 electron affinity of (PICCARDI), A., 769.
 chemical constants of (JELLINEK), A., 569.
 conductivity of solutions of benzamide in (FINKELSTEIN), A., 682.
 equilibrium of the reaction of, with iodine (MÜLLER; BODENSTEIN and SCHMIDT), A., 1100.
 dielectric constant of (BRAMLEY), A., 886.
 dielectric constant and molecular weight of (PAULING), A., 456.
 heat capacity and entropy of (LATIMER and HOENSHEL), A., 232.
 vapour pressure of (SCHEFFER and VOOGD), A., 342.
 velocity of reaction of aqueous formic acid with (HAMMICK, HUTCHISON, and SNELL), A., 32.
 content of, in the animal organism (BERNHARDT and UCKO), A., 635.
 use of, in quantitative analysis (NAKASONO and INOKO), A., 1115.
 Bromine compounds with oxygen and hydrogen, analysis of mixtures of (POLLAK; MASON and CHAMOT), A., 1220.
 Hydrobromic acid, manufacture of (RIEDEL A.-G. and HUETER), (P.), B., 787.
 production of, from bromine and steam in presence of carbon (NEUMANN, STEUER, and DOMKE), B., 358.
 ultra-violet absorption spectrum and photochemical decomposition of (TINGEY and GERKE), A., 882.
 dielectric constant of (PAULING), A., 225.
 activity coefficients of (LIVINGSTON), A., 251.
 activity of, in aqueous solutions, alone and in presence of sulphates (LIVINGSTON), A., 245.
 equilibrium between iodic acid and (SCHWICKER and SCHAY), A., 1007.
 action of, on cupric bromide in acetic acid solution (DENIGÈS), A., 922.
 Bromides, bromine tensions of (JELLINEK and ULOTH), A., 463.
 determination of, potentiometrically (LANGE and SCHWARTZ), A., 701.
 determination of, in presence of other halides and cyanides (BERG), A., 1017.
 Bromine determination:—
 determination of, by the chromic acid method (HIBBARD), A., 260.
 Bromine value of fats, determination of (RUPF and BRACHMANN), B., 499.
 Bromoform, molecular compounds of (WEISSENBERGER, SCHUSTER, and LIELACHER), A., 465.
 "Bromoil" process, bleaching agent for (MAYER), (P.), B., 722.
 Bronze, brittle ranges of (KENT), B., 326, 792*.
 of high lead content (DAY and INTERNAT. MOTOR Co.), (P.), B., 690.

- Bronze, solder for joining lead alloys to (METALL-VERARBEITUNGS-
GES.), (P.), B., 331.
scrap and residues, recovery of copper, tin, and lead from
(LEWIN), (P.), B., 369.
- Brucine metho-*p*-toluenesulphonate (RODIONOV), A., 533.
- Brucinonic acid, derivatives of (LEUCHS and SCHMIEDER), A.,
418.
- Brucite. See Magnesium hydroxide.
- Budde effect in bromine (LEWIS and RIDEAL), A., 484.
- Buffalo, Indian, milk of, compared with that of carabao (GOMEZ),
A., 1269.
- Buffer solutions (MOSER), A., 867; (KOLTHOFF and VLEESCH-
HOUWER), A., 1220.
for hydrogen-ion concentration (ATKINS and PANTIN), A., 374.
hydrogen-ion concentration of (AUGSBERGER), A., 1115; (BUY-
TENDIJK and BRINKMAN), A., 1220.
catalysis in (KILPATRICK), A., 919.
- Building materials, manufacture of (BURNLEY), (P.), B., 129, 130.
strengthening and waterproofing of (KIRKPATRICK), (P.), B.,
56.
mixture for facing of (DUFON and OBANK), (P.), B., 130.
containing sulphur (BACON, KOBBE, BASCOM, and TEXAS GULF
SULPHUR CO.), B., 130.
burnt, manufacture of (GRONROOS), (P.), B., 632.
protection of, against insects (KENDALL), (P.), B., 314.
stable to water, production of, from raw clay (BUDNIKOV), B.,
825.
porous insulating, manufacture of, from coal slack (NEUHAUS
and OPPERBECK), (P.), B., 364.
vesicular, manufacture of (BOYNTON), (P.), B., 489*.
- Bulbus scilla*, manufacture of pure glucoside from (HOFFMANN-
LA ROCHE & Co.), (P.), B., 851.
heart-affecting glucoside from (CHEM. WORKS SANDOZ, and
SUTER), (P.), B., 466*.
- Burettes, micro-, filling of (v. KRÜGER), A., 374.
- Burners, atmospheric gas and oil (HUNTER), (P.), B., 909.
for gas or powdered fuel (DYER), (P.), B., 815.
for liquid fuel (HEDWORTH), (P.), B., 909; (LANG), (P.), B.,
1006.
for heavy oils (SAMBUC and BRAZZOLA), (P.), B., 1006.
micro- (STREIBINGER), A., 492.
- Butacetal, γ -amino- and γ -bromo-, and their derivatives (MAN-
NICH and HORKHEIMER), A., 504.
- Butadiene derivatives (NEBER and PAESCHKE), A., 1119.
- Butadiene (MÜLLER), A., 44.
and its halides (STRAUS and KOLLER), A., 1120.
- cyclo*Butadienes, isomerism of dimeric ketens and (SCHROETER
and FINCK), A., 731.
- Butaldehyde, preparation of (PIGG and COMMERCIAL SOLVENTS
CORP.), (P.), B., 463.
purification of (BOGIN and COMMERCIAL SOLVENTS CORP.), (P.),
B., 28.
polymerisation of (BOGIN and COMMERCIAL SOLVENTS CORP.),
(P.), B., 465.
- n*- and *iso*-Butaldehydes, 2:4-dinitrophenylhydrazones of (BRADY
and ELSMIE), A., 394.
- Butane, *d*-amino- γ -hydroxy-, chloroplatinate, and *d*- α -*di*-
hydroxy-, and its diphenylcarbimide (LEVENE and HALLER),
A., 1122.
 β -*di*amino-, salts and derivatives of (FREJKA and ZAHLOVA),
A., 1233.
 $\alpha\beta$ - and $\alpha\beta\beta$ -tribromo- (LÉFINGLE), A., 817.
- Butane- $\alpha\beta\gamma$ -tetracarboxylamide (INGOLD and SHOPPEE), A., 1039.
- cyclo*Butane-1:2:2:3-tetracarboxylic acid, ethyl and methyl esters
(ING and PERKIN), A., 48.
- cyclo*Butane-1:2:3-tricarboxylic acid, 2-cyano-, esters (ING and
PERKIN), A., 48.
- Butan- β -ol, α -hydroxylamino-, oxalate (SCHMIDT, ASCHERL, and
MAYER), A., 45.
- Butenes, bromo-, isomeric (LÉFINGLE), A., 817.
- $\Delta\beta$ -Butene- $\alpha\beta$ -tricarboxylic acid, γ -hydroxy-, ethyl ester (GAULT
and KLEES), A., 938.
- Butenoic acids, and their nitriles, ultra-violet absorption spectra
of (BRUYLANTS and CASTILLE), A., 8.
- o*- $\Delta\beta$ -Butenylphenol, and its derivatives (CLAISEN and TIETZE), A.,
1242.
- 2-Butoxyanisoles, nitro-derivatives (ALLAN and ROBINSON), A.,
396.
- p*-*n*-Butoxybenzhydramine, and its hydrochloride (TORRÈS y
GONZALÈS), A., 396, 609.
- p*-*n*-Butoxybenzophenone, and its oxime (TORRÈS y GONZALÈS),
A., 609.
- 10-*n*-Butoxy-5:10-dihydrophenazine (BURTON and GIBSON), A.,
419.
- 1-*iso*Butoxy- Δ^1 -cyclohexene oxide (BERGMANN and GIERTH), A.,
728.
- 5-Butoxymethyl-5-ethylbarbituric acids (HILL and KEACH), A.,
271.
- Butoxymethylethylmalonic acids, ethyl esters (HILL and KEACH),
A., 271.
- Butter, refractive index and density of fat of (SCHNECK),
B., 962.
influence of feeding coconut-oil-cake to cows on Polensko value
of (PARASCHTSCHUK), B., 73.
vitamin-*D* content of fat of (MCCOLLUM, SIMMONDS, and
BECKER), A., 1279.
adulterated, detection of (ATKINSON), B., 895.
fat, turbidity tests on, and its substitutes (LEDUC), B., 895.
determination of, in margarine (ELSDON and SMITH), B., 295.
substitutes, manufacture of (MILK OIL CORP. and NORTH), (P.),
B., 383*.
xylene number of (v. RAALTE), B., 563.
analysis of (MITCHELL and ALFEND), B., 605.
- Butter making (MILK OIL CORP.), (P.), B., 26.
- Butterfly, pigments from wings of (THOMSON), A., 424, 1168.
white. See *Pieris*.
- Buttermilk, apparatus for desiccation of (COLLIS and COLLIS
Co.), (P.), B., 419.
distinction between soured centrifuged milk and (BROUWER),
B., 212.
- Buttons, dyeing of materials for (FLEMMING), B., 535.
- n*-Butyl alcohol, anhydrous, preparation of (STEVENS), (P.), B.,
300*.
manufacture of (BEINOT and COMMERCIAL SOLVENTS CORP.),
(P.), B., 211.
yellow oil by-product from manufacture of, by fermentation
(MARVEL and BRODERICK), B., 104.
production of acetone and (LEGG and COMMERCIAL SOLVENTS
CORP.), (P.), B., 563.
from artichokes (DESBOROUGH, THAYSEN, and GREEN), (P.),
B., 1026.
mutual solubility of water and (HILL and MALISOFF), A., 571.
effect of lactic acid bacteria on fermentation of (FRED, PETER-
SON, and MULVANIA), A., 1177.
- iso*Butyl alcohol, viscosity of, at low temperatures (MIZUSHIMA),
A., 1082.
action of magnesium *isobutoxide* on (TERENTIEV), A., 268.
- tert*-Butyl alcohol, heat capacity, entropy, and energy of (PARKS
and ANDERSON), A., 784.
- Butyl alcohols, preparation of, by means of bacteria (MEZZADROLI),
B., 210.
- n*-Butyl *isobutyl* sulphide (v. BRAUN and MURJAHN), A., 829.
mercaptals of sugars (UYEDA and KAMON), A., 1125.
- iso*Butyl thiocyanate (v. BRAUN and MURJAHN), A., 829.
- Butylacetylacetones, and their salts (MORGAN), A., 188.
- β -*n*-Butylallylamino-*n*-propyl alcohol, and its *p*-aminobenzoate
hydrochloride (ADAMS, DREGER, VOLWILER, and ABBOTT
LABORATORIES), (P.), B., 851.
- Butylamine, δ -bromo-, and δ -iodo-, benzoyl derivatives (DUDLEY
and THORPE), A., 53.
- 2-Butylamino-1:6:8-*trinitronaphthalenes* (VAN DER KAM), A.,
1240.
- 2-Butylamino-1:2:3:4-tetrahydronaphthalene, δ -amino-, and its
benzoyl derivative, and their salts (v. BRAUN, GOLL, and
METZ), A., 1233.
- Butylanilines, derivatives of (BRAUN and MURJAHN), A., 829.
- n*-Butylaniline, 2:4-dinitro- (VAN DER KAM), A., 1240.
- sec*-Butylbarbituric acid (ROGER), (P.), B., 899.
- n*-Butylbenzene (READ and FOSTER), A., 827.
- d*-*sec*-Butylbenzene, preparation and rotation of, and its deriv-
atives (HARRISON, KENYON, and SHEPHERD), A., 509.
- 2-*iso*Butyl-1:3-benzoxazone (MOUCKA and RÖGL), A., 626.
- n*-Butylisobutylaniline (v. BRAUN and MURJAHN), A., 829.
- iso*Butylisobutylidenediazine (TAIPALE), A., 157.
- Butyl-*m*-cresol, nitrodibromo-, methyl ether of, as perfume (CORTI
and CHEM. WORKS FLORA), (P.), B., 173.
- sec*-Butylcyanoacetic acid, ethyl ester (ROGER), (P.), B., 899.
- iso*Butyldeoxybenzoin (BETTIECHE and EHRLICH), A., 1234.
- Butyl- $\beta\beta$ -dicarboethoxydiethylamines (McELVAIN), A., 1044.
- e*-Butyldodecane- ϵ -7-diol (NICOLLE), A., 333.

- iso*Butylene dibromide, action of sodium acetate on (KRASSOVSKI and SCHENDEROVITCH), A., 1022.
 Butylenes, bromo-, isomeric (LÉPINGLE), A., 935.
n-Butylene- β - γ -diphenyldinitrosamines (MORGAN, HICKINBOTTOM, and BARKER), A., 503.
 β -Butyleneglycol, formation of, in fermentation (LEBEDEV), A., 324.
 detection of (KLUYVER, DONKER, and VAN 'T HOOFT), A., 203.
*iso*Butylenehexacarboxylic acid, methyl ester (SCHROETER and FINCK), A., 731.
*iso*Butyl- γ -cyclogeraniolene (ESCOURROU), A., 1238.
*iso*Butylglycolamide (NICOLLE), A., 383.
n-Butyl- Δ^1 -cyclohexenylacetone semicarbazone (KON and SMITH), A., 952.
*iso*Butylhydrazine, and its derivatives (TAIPALE), A., 157.
 5-Butyl-5- β -hydroxyethylbarbituric acid (CRETOHER, KOCH, and PITTENGER), A., 180.
*iso*Butylidene di- β -ethoxyethyl disulphide (ROJAHN and LEMME), A., 146.
*iso*Butylidenesalicylamides (MOUCKA and RÖGL), A., 626.
sec-Butyliminobarbituric acid (ROGER), (P.), B., 899.
sec-Butylmalonic acid, diethyl ester (ROGER), (P.), B., 899.
*cyclo*Butylmethylmorphine, and its salts (v. BRAUN, KÜHN, and SIDDIQUI), A., 851.
N-Butylnicotone (KARRER and TAKAHASHI), A., 627.
 5-*n*- and *iso*-Butyl-5-phenacylbarbituric acids (KEACH and HILL), A., 1259.
 2-*iso*Butylpyridine, 3:5-diacetyl derivative, and its picrate (OPARINA), A., 844.
n-Butylpyridinium tetrabromo- and tetraiodo-thallates (KRAUSE and v. GROSE), A., 1112.
 2-*iso*Butylquinoline, derivatives of (MEISENHEIMER, STOTZ, and BAUER), A., 76.
*iso*Butylresorcinol (DOHME, COX, and MILLER), A., 838.
*iso*Butylsemicarbazide (TAIPALE), A., 157.
n-Butylsulphonic acid, aniline salt (GILMAN and MORRIS), A., 1132.
 4-Butylcyclohexuripentane-3:5-diones 1:1-dichlorides (MORGAN), A., 188.
 4-Butylcyclohexuripentane-3:5-diones, and their dichlorides (MORGAN), A., 188.
 2-*iso*Butyl-1:2:3:4-tetrahydroquinoline picrate (MEISENHEIMER, STOTZ, and BAUER), A., 77.
 Butylthiazanes, and their dioxides and hydrochlorides (LAWSON and REID), A., 80.
n-Butylthiophens, and their derivatives (SCHEIBLER and RETTIG), A., 843.
 5-Butyl-5- β -vinylxyethylbarbituric acid (CRETCHER, KOCH, and PITTENGER), A., 180.
 Butyl- β -vinylxyethylmalonic acid, diethyl ester (CRETCHER, KOCH, and PITTENGER), A., 180.
 Butylxanthidols, and their perchlorates (CONANT, SMALL, and SLOAN), A., 842.
 Butyranilide- β -sulphonic acid, and its optically active forms and their salts (BACKER and BLOEMAN), A., 271, 272.
n-Butyric acid, manufacture of (HANCOCK and COMMERCIAL SOLVENTS CORP.), (P.), B., 463, 772*; (LEGG, HANCOCK, and COMMERCIAL SOLVENTS CORP.), (P.), B., 608.
 by means of bacteria (MEZZADROLI), B., 210.
 heat capacity, entropy, and energy of (PARKS and ANDERSON), A., 784.
 vapour-pressure curves of mixtures with (WEISSENBARGER, HENKE, and KATSCHINKA), A., 683.
 oxidation of, with hydrogen peroxide in presence of phosphates (WITZEMANN), A., 269, 270.
n-butyl ester (LEGG, BOGIN, and COMMERCIAL SOLVENTS CORP.), (P.), B., 608.
p-chlorophenyl ester (WITTIG, BANGERT, and RICHTER), A., 301.
 Butyric acid, γ -amino-, fate of, in phloridzinised dogs (CORLEY), A., 1171.
 α -bromo-, velocity of hydrolysis of (ZAWIDZKI), A., 914.
 γ -chloroamino- β -hydroxy-, acetyl derivative (TOMITA), A., 1129.
 α - and β -hydroxy-, oxidation of, with hydrogen peroxide, in presence of phosphates (WITZEMANN), A., 270.
 β -hydroxy-, dehydration and polymerisation of (LEMOIGNE), A., 1178.
 configurational relationship of γ -hydroxyvaleric acid and (LEVENE and HALLER), A., 1122.
 Butyric acid, configuration of propylene glycol and (LEVENE and WALT), A., 937.
 function of kidneys in the breakdown of (SNAPPER, GRÜNBAUM, and NEUBERG), A., 427.
 in muscle and liver (SNAPPER and GRÜNBAUM), A., 1167.
 ethyl ester (DEWAELE), A., 384.
 determination of, in liver and muscle (SNAPPER and GRÜNBAUM), A., 1284.
 hydroxyamino-, and its copper salt and derivatives (SCHRYVER and BUSTON), A., 749.
d-Butyric acid, α -diamino-, and its dibenzoyl derivative, and their derivatives (KARRER, ESCHER, and WIDMER), A., 505.
l-Butyric acid, β -hydroxy- (LEVENE and WALT), A., 937.
 Butyric acids, basic beryllium salts, crystal structure and constitution of (MORGAN and ASTBURY), A., 995.
 thallous salts (WALTER), A., 712.
p-cumyl esters (BERT), A., 285.
d- and *l*-Butyric acids, β -thiol- (LEVENE and MIKESKA), A., 1225.
*iso*Butyrophenone semicarbazone (JOHNSON and KON), A., 1246.
n-Butyrophenoneanil (BOGERT and ANDERSEN), A., 311.
 Butyryl-2:4-dimethylpyrrolecarboxylic acids, ethyl esters (FISCHER and SCHUBERT), A., 737.
 Butyrylguanidines, and their salts (ANDREASCH), A., 819.
 Butyrylguanidines, α -bromo-, and their derivatives (ANDREASCH), A., 277.
 5-Butyryl-2-methylpyrrole-3-carboxylic acid, ethyl ester (FISCHER and SCHUBERT), A., 737.
n-Butyryl-*p*-phenetidine (HILL and RABINOWITZ), A., 517.
 2-Butyrylphenol, 4-chloro- (WITTIG, BANGERT, and RICHTER), A., 301.
 3-Butyryl-2-propylbenzo-1:4-pyrone, 6-chloro- (WITTIG, BANGERT, and RICHTER), A., 301.
*iso*Butyrylresorcinol (DOHME, COX, and MILLER), A., 838.
 Butyrylresorcinol, α -bromo- (KLARMANN), A., 1135.
N-*iso*Butyrylsalicylamide (MOUCKA and RÖGL), A., 626.

C.

- Cabbage, variations in mineral content of (PETERSON, ELYEIJEM, and JAMISON), B., 252.
 influence of nutrient supply on time of maturity in (EDMUND and LEWIS), B., 960.
 red, extracts of, as indicator (MILOBEDZKI and JAJTE), A., 927.
 Cacao, examination of (LÜHRIG), B., 338.
 fermentation of (KNAPP), B., 564.
 beans, fermentation of (McLAUGHLIN), (P.), B., 383.
 and products (FINCKE), B., 73.
 butter, determination of melting point of (SABALITSCHKA), B., 20.
 detection of coconut oil in (HANUŠ and KOMOROUSOVÁ), (P.), B., 140; (RUFFY), B., 552.
 detection and determination of coconut oil and milk fat in (KUHLMANN and GROSSFELD), B., 165.
 fat, determination of alkalis and alkaline-carths in (PRESCHER and CLAUS), B., 285.
 products, determination of fat in (LEPPER and WATERMAN), B., 26.
 determination of husk in, microscopically (GRIEBEL and SONNTAG), B., 605.
 determination of sucrose and its mixtures with sugars in (FINCKE), B., 252.
 shell, fermentation of (CHURCHMAN), B., 210.
 waste, manufacture of theobromine from (TIEDE), (P.), B., 384.
 Cacti, manufacture of aldehydes and essential oils from (SINCLAIR), (P.), B., 252.
 Cade oil, examination of, polarimetrically (MASSY), B., 804.
 testing of (HURRE), B., 804.
 Cadinene, action of chromic acid and of chromyl chloride on (GIBSON, ROBERTSON, and SWORD), A., 299.
 Cadmium, spectrum of (FUKUDA), A., 651; (NAGAOKA and MISHIMA), A., 1071.
 fine structure in (WOOD; McNAIR; SNOEK and BOUMA), A., 986.
 effect of an electric field on (FEJIOKA), A., 986.
 with an electrodeless discharge (ROBERTSON), A., 550.
 absorption spectrum of the vapour of (FRAYNE and SMITH), A., 550.

- Cadmium**, vacuum arc spectrum of (BROWN), A., 986.
 vacuum arc emission spectrum of (FUKODA, KUYAMA, and UCHIDA), A., 652.
 separation of spectra of (ESCLANGON), A., 446.
 fluorescence of the vapour of (KAPUSCINSKI), A., 10; (POWER), A., 109.
 electrical resistance of (MEISSNER), A., 1086.
 thermo-electric properties of (GRÜNEISEN and GOENS), A., 784.
 and its alloys, density of (SAUERWALD), A., 786.
 vapour pressure of (JENKINS), A., 233; (MAIER), A., 342.
 electroplating with (HOFF and GRASSELLI CHEMICAL Co.), (P.), B., 133; (UDYLITE PROCESS Co., LOUTH, and YOUNG), (P.), B., 675*.
 protection of iron by (RAWDON), B., 243.
 enamelling of (PIERCE, HUMPHRIES, and UDYLITE PROCESS Co.), (P.), B., 542.
Cadmium alloys with aluminium and magnesium (VALENTIN), B., 634.
 with copper rich in cadmium, physical properties of (JENKINS), B., 328*.
 with copper and magnesium (ROSTHORN), (P.), B., 635.
 with magnesium, potential of (VINOGOROV and PETRENKO), A., 360.
 with tin, electrolysis of (KREMANN and BAUKOVAC), A., 801.
 with zinc (DEELEY), B., 328*.
 constitution and physical properties of (JENKINS), B., 831.
Cadmium compounds, bactericidal action of (COOPER and ROBINSON), B., 934.
 fate of, in the body (HESSEL), A., 1274.
Cadmium borates (MAZZETTI and DE CARLI), A., 809.
 carbonate, rate of dissociation of (CENTNERSZWER and BRUŽS), A., 581.
 perchlorate, hydrazinate of (FRIEDERICH and VERVOORST), B., 933.
 chloride, crystal structure of (BRUNI and FERRARI), A., 995.
 hydride, structure and band spectrum of (MULLIKEN), A., 452.
 hydroxide, crystal structure of (NATTA), A., 228.
 iodide, influence of iodine on the conductivity of aqueous solutions of (BRUNS), A., 128.
 alkali pyrophosphates (ROSENHEIM, FROMMER, GLÄSER, and HÄNDLER), A., 696.
 sulphide, precipitation of, from solutions of cadmium chloride (KRISHNAMURTI), A., 814.
 sulphides, crystal structure of (ULRICH and ZACHARIASEN), A., 664.
 vanadate (EPHRAIM and BECK), A., 371.
Cadmium detection, determination, and separation :—
 detection of (GEILMANN), A., 1019.
 detection of, in presence of copper (MEURICE), A., 703; (KARNS), A., 1116.
 detection of, in glass (GEILMANN), B., 877.
 determination of, iodometrically (KRAUS), A., 592.
 determination of, in copper (BLAZEY), A., 491.
 separation of (MANCHOT, GRASSL, and SCHREEBERGER), A., 40.
 separation of, electrolytically, from copper (JÍLEK and LUKAS), A., 262.
 separation of zinc and (LASSIEUR), A., 1013.
Cadmium anodes. See under Anodes.
Cæsium, preparation of, and its cosinate (DELAPLACE), A., 949.
 arc spectrum of (NEWMAN), A., 550.
 vapour, photo-ionisation and absorption of (MOHLER, FOOTE, and CHENAULT), A., 217; (MOHLER), A., 877.
 and its iodide, magnetic susceptibilities of (CROW), A., 14.
 thermionic and adsorption properties of, on tungsten (BECKER), A., 988.
 replacement of, in its salts by iron (HACKSPILL and PINCK), A., 1015.
Cæsium salts, pharmacology of (KÜLZ and PAULS), A., 319.
Cæsium thallium chlorides (MALQUORI), A., 809.
 silver gold halides (VOGEL; EMICH), A., 562.
Cæsium organic compounds :—
 Cæsium triselenocyanide (BROCKENBACH and KELLERMANN), A., 31.
Cæsium determination :—
 determination of (STRECKER and DIAZ), A., 261.
Caffeic acid, sodium bismuth salt (MASCHMANN), A., 311.
Caffeine, action of, on acid-base exchange (VEIL and GRAUBNER), A., 1273.
 effect of, on the heart (SALANT and NADLER), A., 1273.
 effect of, in intoxication (DAVIDSON), A., 91.
Caffeine, effect of, on uric acid excretion (CLARK and DE LORMIER), A., 974.
 compounds of, with tin and titanium chlorides (SCAGLIARINI and BRASI), A., 310.
Caffeine, bromo- and chloro-derivatives (YOSHITOMI), A., 82.
Calamary. See *Todarus sagittatus*.
Calamintha nepeta, essential oil of (ROMEO and GIUFFRÈ), B., 107.
Calcæmia, experimental (ASTANIN), A., 425.
 calcium of the blood-serum in (MORITZ), A., 425.
Calcification in vitro (SHIPLEY, KRAMER, and HOWLAND; ROBINSON), A., 638.
Calcining apparatus (BARR and INTERNAT. AGRICULTURAL CORP.), (P.), B., 425.
Calcite, growth of, on ankerite and chalybite (DE KLERK and GOLDSCHMIDT), A., 265.
 X-ray absorption of calcium in (LINDSAY and VAN DYKE), A., 1186.
Calcium, flame spectra of (EISENSCHITZ and REIS), A., 556.
 infra-red vacuum arc spectrum of (SANDVIK and SPENCE), A., 329.
 ionised, spectrum of (SAUNDERS and RUSSELL), A., 102.
 scattering of X-rays by (JAMES and RANDALL), A., 663.
 electrode potential of (DRUCKER and LUFT), A., 803.
 accelerated motion of the vapour of (SUR), A., 991.
 absorption of hydrogen by (KAMEŃSKI), A., 809.
 precipitation of, from sea water (IRVING), A., 1021.
 action of potassium thiocyanate with (BRESALSKI and VAN ECK), A., 1218.
 action of magnesium and, on seedlings of yellow lupin (BURK), B., 250.
 excretion of intravenously injected (DADLEZ), A., 753.
 in human serum (DI-FOUTSIN), A., 634.
Calcium alloys with aluminium, electrical resistivity of (EDWARDS and TAYLOR), B., 883.
 with copper (HARVEY and AMER. MAGNESIUM CORP.), (P.), B., 133.
 with mercury (EILERT), A., 356; (P.), B., 332.
 with tin (HUME-ROTHERY), A., 356.
Calcium compounds in diet (HART, STEENBOCK, ELVEHJEM, SCOTT, and HUMPHREY), A., 541.
 absorption and excretion of (ARISTOWSKY), A., 318.
 assimilation of, by dairy cows (MILLER; MEIGS, TURNER HARDING, HARTMAN, and GRANT), A., 862.
Calcium salts, preparation of pure (RAQUET), B., 629.
 ionisation of, in physiological fluids (JENDRASSIK and MOSER), A., 1172.
 administration of, with and without ultra-violet light (DENIS and CORLEY), A., 431.
 antagonism of magnesium salts and (HIRSCHFELDER and SERLES), A., 1274.
 effect of protein solutions and of blood serum on diffusibility of (LOEB), A., 856.
 in coagulation of blood (LOUCKS), A., 536.
 in blood and serum (HOLLÓ and WEISS), A., 85; (HJORT), A., 86.
 solubility of, in blood serum (IRVING), A., 855.
 in diet and their intestinal absorption (ORR, HOLT, WILKINS, and BOONE), A., 862.
 absorption of, from the intestines (IRVING), A., 972; (BERGEIM), A., 1170.
 therapeutic action of, on metabolism (BRIGGS), A., 971.
 effect of, on nitrogen excretion (BARATH and v. GYURKOVITCH), A., 863.
 in serum (NITSCHKE), A., 422; (NITSCHKE and FREYSCHMIDT), A., 1051.
 excretion of, in urine (GREENWALD and GROSS), A., 206.
 determination of, in blood serum (TREVAN and BAINBRIDGE), A., 762; (ROE and KAHN), A., 763.
Calcium aluminates, action of sodium and magnesium sulphates on (SHELTON), B., 91.
 arsenate, manufacture of (LOPEZ), (P.), B., 439; (SCHLEICHER and AMER. METAL Co.), (P.), B., 708; (BIDAUD and SOC. CHIM. USINES DU RHÔNE), (P.), B., 743.
 lime sulphur sprays from (GOODWIN and MARTIN), B., 990.
 arsenates, relative toxicity of (HENDRICKS, BACOT, and YOUNG), B., 208.
 carbide, manufacture of (PATART), (P.), B., 812.
 energy balance in electrical production of (BAUMANN), B., 874.
 commercial (SCHLUMBERGER), B., 319.

- Calcium carbide, heat of formation of (RUFF and JOSEPHY), A., 685.
 carbonate, thermal dissociation of (BÄCKSTRÖM), A., 798.
 solubility of (STUMPER), A., 466.
 recovery of, from caustic liquors (RICHTER, SWASEY, and BROWN Co.), (P.), B., 665.
 effect of dyes on crystallisation of (KOHLSCHÜTTER and EGG), A., 14.
 fertilising action of (TRUNINGER), B., 415.
 effect of, on acid soils (MÜNTER), B., 207.
 injurious action of, on Podsol soils (TJULIN), B., 415.
 influence of, on decomposition of organic substances in soil (TJULIN), B., 415.
 See also Calcite and Limestone.
 chloride, production of, for packing (DOW and DOW CHEMICAL Co.), (P.), B., 822.
 effect of salts on ionisation of (BELAK and SZEP), A., 907.
 surface tension of solutions of (HARKINS and GILBERT), A., 468.
 deliquescence of (SWAN), B., 978.
 preparation of starch and (HENKEL & Co.), (P.), B., 561.
 influence of manuring with, on crops (DAFERT and ERDÖDY), B., 416.
 detection of barium chloride in (RICHARD), B., 786.
 chloroaluminate (*phosgeno-aluminate*) (GERMANN and TIMPANY), A., 35.
 chromate, crystal structure of (HERMANN, HOSENFELD, and SCHÖNFELDT), A., 996.
 fluoride, reflexion of X-rays by (HAVIGHURST), A., 780.
 fluosilicate, slow coagulation of solutions of (HERRERA), A., 244.
 hydride, action of, on organic compounds (PORLEZZA and GATTI), A., 837.
 hydrides (KAMIENSKI; HÜTTIG, and BRODKORB), A., 809.
 hydroxide, absorption of gases in (WEBER and NILSSON), B., 977.
 reaction of sodium phosphates with (HAYASHI and MATSUI), A., 1015.
 recovery of, from calcium saccharate (DRUMMOND and HOLLY SUGAR CORP.), (P.), B., 561.
 rôle of, hydrated lime-acid lead arsenate sprays (CAMPBELL), B., 506.
 hypochlorites, production of (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 488*.
 hypochlorite compounds, drying of (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 440*.
 permanganate, absorption spectrum of (ADINOLFI), A., 659.
 nitrate, preparation of, for field distribution (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 926.
 manufacture of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 139, 379*, 788.
 conversion of, into fertilisers (I. G. FARBENIND.), (P.), B., 893.
 mixed fertilisers containing (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 293, 336.
 manurial experiments with (BLANCK and HAHNE), B., 379.
 oxide (*lime*), manufacture of (STEPHENSON and ALLEN-LIVERSIDGE, LTD.), (P.), B., 1013.
 melting point of (SCHUMACHER), A., 340.
 equilibrium of ferric oxide, silica, and (HANSEN and BOGUE), A., 684.
 equilibria in the system, silica, alumina, and (GRÜN), B., 323, 324.
 equilibrium of silica, alumina, sodium oxide, and (EITEL), B., 742.
 hydration of (DEMPSTER and HOLTON), (P.), B., 52; (RICH), (P.), B., 126; (WHITMAN and DAVIS), B., 272; (HITE; CHUBBUCK; MATHERS, and NAT. LIME ASSOC.), (P.), B., 584.
 apparatus for (MISCAMPBELL), (P.), B., 946.
 burning of (WARNER), (P.), B., 440*; (STEHMANN), (P.), B., 489*; (HEYL), (P.), B., 668.
 effect of time and temperature of burning on properties of (HASLAM and HERMANN), B., 914.
 rate of solution and availability of commercial (HASLAM, ADAMS, and KEAN), B., 190.
 compound of sugar and (STEFFEN), (P.), B., 928.
 precipitation of, in the sugar industry (SAILLARD), B., 103.
 action of, on enzymes (COLLETT), B., 454.
 in soils (BARNETTE), B., 763; (WHITE and HOLBEN), B., 800.
 manurial experiments with (MACINTIRE), B., 640.
 effect of, on preservation of the germinating power of seeds (KONDO), B., 764.
 analysis of (BAILAR), B., 537.
 Calcium oxide, burnt, analysis of, after storage (STETTbacher), B., 948.
 determination of, in raw mixture for blast-furnace cement (STRUMPF), B., 408.
 determination of, in cement and cement raw materials (KÜHL and KLASSE), B., 543.
 determination of, in water (DUBOUX), B., 966.
 Monocalcium phosphate, solubility of, in water (STOLLENWERK), A., 1090.
 Dicalcium phosphate, solubility of (DOMONTOVITSCH and SARUBINA), A., 125.
 Calcium phosphate, precipitation of, in rings (DOGADKIN), A., 1099.
 precipitation of, in the sugar industry (FARNELL), B., 927.
 phosphates, action of solutions of citric acid and its ammonium salts on (ANDREASEN), B., 991.
 relative merits of, as fertilisers (KLING; INGHAM; HALL; WEBBER; DODDS; DAWSON), B., 892.
 silicate, production of alumina, alkali, and (COWLES and ELECTRIC SMELTING & ALUMINIUM Co.), (P.), B., 743.
 product from (ENDRES and CELITE Co.), (P.), B., 439.
 stable solutions of compounds of, suitable for injection (CHEM. FABR. GAUFF, and BERNDT), (P.), B., 217.
 silicate and sulphide, equilibria between, in furnace slags (GLASER), B., 753.
 See also Pseudo-wollastonite.
 silicates as source of lime in soils (BARNETTE), B., 763.
 silicide (WÖHLER and SCHLIEPHAKE), A., 368.
 sulphate, solubility and grain size of (BALAREV), A., 344.
 solubility of, at boiler-water temperatures (HALL, ROBB, and COLEMAN), B., 391.
 thermal dissociation of, with metallic oxides (MARCHEL), A., 359.
 surface tension of crystals of (BALAREV), A., 790.
 microchemical examination of (BUDNIKOV), A., 923.
 dehydration of (BALAREV), A., 1217.
 decomposition of (ZAWADZKI, KONARZEWSKI, LICHTENSTEIN, SZYMANKIEWICZ, and WACHSZEJSKI), A., 923.
 action of water on (CHASSEVENT), A., 1217.
 influence of catalysts on rate of rehydration of (BUDNIKOV), A., 1012.
 manufacture of sulphuric acid from (MÜLLER), B., 271.
 precipitation of (LAMBERT and SCHAEFFER), A., 1209.
 effect of, on acid soils (MÜNTER), B., 207.
 determination of, in golden antimony sulphide (CHIAPPERO), B., 874.
 See also Gypsum.
 sulphite, precipitation of, and effect of sugar thereon (FARNELL), B., 72.
 hydrogen sulphite liquors, wetting of spruce wood with (SCHWALBE and BERNDT), B., 531.
 dithionate, solubility of (ISHIKAWA and KIMURA), A., 237.
 vanadate (EPHRAIM and BECK), A., 371.
 Calcium organic compounds:—
 Calcium alkyl and phenyl iodides (GILMAN and SCHULZE), A., 1130.
 carbide, determination of, in calcium cyanamide (FLUSIN and GIRAN), B., 684.
 cyanamide, technology of (DOLCH), B., 272.
 heat of formation of (EHRlich), A., 685; (FRANCK and HOCHWALD), B., 88.
 manufacture of ammonia and ammonium compounds from (FABR. NAT. PROD. CHIM. & d'EXPLOSIFS), (P.), B., 744.
 manufacture of nitrogenous fertilisers from (CHEM. FABR. HEPPES & Co., and CARFZOW), (P.), B., 379.
 mixing of, with soil before application (BLANCK and GIESECKE), B., 102.
 determination of calcium carbide in (FLUSIN and GIRAN), B., 684.
 glucophosphate and glycerophosphate, syntheses of (SABETAY), A., 1123.
 iodide dietherate (GILMAN and SCHULZE), A., 1130.
 saccharate, recovery of calcium hydroxide from (DRUMMOND, and HOLLY SUGAR CORP.), (P.), B., 561.
 silicocyanamide, action of hydrochloric acid on (WÖHLER), A., 1113.
 Calcium detection, determination, and separation:—
 detection of (SAMPSON; MACALLUM), A., 763.
 detection of, in presence of strontium (RAQUET), A., 262.
 determination of (SCHULTEN), A., 140; (FOOTE and BRADLEY), A., 491.

Calcium detection, determination, and separation :—

- determination of, colorimetrically (HAFFNER and SIMON), A., 100.
 determination of, radiometrically (EHRENBURG), A., 929.
 determination of, microchemically, in organic liquids (CONDORRELLI), A., 39.
 determination of, nephelometrically (KRISS), A., 100.
 determination of, in tissues, faeces, and milk (CORLEY and DENIS), A., 444.
 determination of, in urine (INOUE), A., 984.
 separation of magnesium and, as oxalates (FISCHER, STEIKMAN, and DOMBROWSKI), A., 703.
 separation of small quantities of, from large amounts of magnesium (NOLL), B., 221.
Calcium chromosphere, equilibrium of (MILNE), A., 105.
Calico, machines for printing of (CROMPTON), (P.), B., 706.
***Callitris calcarata* (black cypress pine), tannins in bark of** (COOMBS, MCGLYNN, and WELCH), B., 838.
Calorific value and constitution of organic compounds (BARKER), A., 28.
 correction for radiation in determinations of (NIEDERSTRASSER), B., 651.
 theoretical and recorded pressures in oxygen bomb determinations of (BRADLEY, ROSECRANS, and CORBIN), B., 346.
Calorimeters (SCHOLES), (P.), B., 41*.
 copper covers for (WHITE), A., 706.
 bomb (LANDRIEU), B., 34.
 steel (KOHEN), B., 3.
 gas. See Gas calorimeters.
 isothermal (HIROBE), A., 910.
 portable (MCCLENDON, HUMPHREY, and LOUCKS), A., 1067.
Calorimetry (COOPS and VERKADE), A., 28; (VERKADE, HARTMAN, and COOPS), A., 686, 1210; (VERKADE and COOPS), A., 893.
 rapid and accurate methods in (WHITE), A., 686.
 animal (PLUMMER, DEVEL, and LUSK), A., 1055.
 clinical (RICHARDSON, LEVINE, and DU BOIS), A., 637.
 isothermal (v. WARTENBERG and LERNER-STEINBERG), A., 909.
Calumba root alkaloids. See under Alkaloids.
Calves, blood of. See under Blood.
 fed whole milk or cereal gruel, fatty acids in the intestinal tract of (NORRIS), A., 196.
Camomile oil, production of (KÁRPÁTI), B., 803.
Camphane series (FORSTER and RAO), A., 1251.
Camphane-2-carboxylic acid, esters, oxidation of (MURAYAMA and TANAKA), A., 619.
Camphane-2-carboxylic acid, 6-bromo-, 6-chloro-, 6-trichloro-hydroxy-, and 6-hydroxy-, and their derivatives (HOUBEN and PFANKUCH), A., 1251.
 2-chloro-, and its derivatives (HOUBEN and PFANKUCH), A., 731.
isoCamphanecarboxylic acid, chlorohydroxy- (HOUBEN and PFANKUCH), A., 1252.
Camphane-2-nitrile, 2-chloro-, 6-trichlorohydroxy-, acetyl derivative, and 6-hydroxy- (HOUBEN and PFANKUCH), A., 1251.
Camphene, manufacture of, from pinene hydrochloride (MEYER and CLAASEN), (P.), B., 216.
Camphene-1-carboxylic acid, and its derivatives (HOUBEN and PFANKUCH), A., 731.
Camphenecarboxylic acids, and bromo-, and 6-chloro-, and their derivatives (HOUBEN and PFANKUCH), A., 1251.
 α -Camphenone, and its derivatives (NAMETKIN and ZABRODIN), A., 521.
Campholcarbinol. See 1:2:2:3-Tetramethylcyclopentyl-1-carbinol.
Campholcarboxylic acid. See 2:3:3:4-Tetramethylcyclopentane-1:2-dicarboxylic acid.
trans-Camphonan acid, amino-, methyl ester, carbamide from (KENDALL and NOYES), A., 1134.
Camphor (HOUBEN and PFANKUCH), A., 731, 1251.
 formation of, from turpentine oil (MURAYAMA), B., 75.
 synthesis of (MASUMOTO), A., 175; (DUPONT and BRUS), (P.), B., 932.
 manufacture of (GIBBS, FRANCIS, and DU PONT DE NEMOURS & Co.), (P.), B., 932.
 from isoborneol (GAMMAY), (P.), B., 995.
 rotation of (LUCAS), A., 337, 662; (LONGCHAMBOX), A., 559.
 electric birefringence of (DE MALLEMAN), A., 778.
 imperfect crystallisation of (BURGERS), A., 890.
 movements of, on water (RAMDAS), A., 1095.
 researches on, at Naples (DE DOMINICIS and LA ROTONDA), B., 645.
 pharmacology of (SIEGEL), A., 320.

- Camphor, oximo of, and nitro-, and their sodium salts, refractivity and conductivity of** (SEMERIA and PICHETTO), A., 30.
 nitrophenylsemicarbazone (WHEELER and WALKER), A., 62.
 absorption spectra of halogen and sulphonic derivatives of (LOWRY and OWEN), A., 454.
 determination of (ASCHAN), B., 768.
Camphor, α - and β -hydroxy-, and their derivatives (BREDT and AHRENS), A., 730.
 isonitroso-, unstable form of (FORSTER and RAO), A., 1251.
Camphor group (NAMETKIN and BRIUSOVA; MURAYAMA and TANAKA), A., 619.
Camphor blue oil, sesquiterpenes of (KOIKE), A., 954.
Camphor oil (ONO), A., 72.
 from leaves and twigs from Uganda (IMPERIAL INSTITUTE), B., 215.
Camphor series (MASUMOTO), A., 175; (MURAYAMA), B., 75.
***d*-Camphoramidic acid, rotation of aryl derivatives of** (SINGH and PURI), A., 457.
Camphoranilic acid *o*-disulphide (BOGERT and STULL), A., 310.
Camphor-6-carboxylic acid, and its derivatives and 3-oximino- (HOUBEN and PFANKUCH), A., 1252.
Camphoric acid, nitrile, mixed ketones from (SALMON-LEGAGNEUR), A., 613.
 methyl ester, action of magnesium ethyl bromide on (SALMON-LEGAGNEUR), A., 951.
***d*-Camphorimide, rotation of aryl derivatives of** (SINGH and PURI), A., 457.
Camphorquinone-6-carboxylic acid (HOUBEN and PFANKUCH), A., 1252.
Camphorsulphonic acid, and its methyl ester (FRÈREJACQUE), A., 1251.
***o*-Camphorylene-2:3-phenazinoiminazole** (SIRCAR and DE), A., 417.
2-Camphylamino-1:6:8-trinitronaphthalene (VAN DER KAM), A., 1240.
Camphylaniline, 2:4-dinitro- (VAN DER KAM), A., 1240.
Camphylcarbinol, esters of (RUPE and SCHAEERER), A., 72.
Canal rays. See under Rays.
Cancer, nucleic acid in tissues in (WILLHEIM), A., 89.
 glycolytic powers of organs in (DISCHE and LASZLO), A., 1169.
 in rats, effect of copper compounds on (HIEGER), A., 636.
***Cancer pagurus* (crab), oxygen dissociation curve of hæmocyantin from** (STEDMAN and STEDMAN), A., 1164.
Cane sugar. See Sucrose and under Sugar.
Canning of marine products, corrosion and blackening in (DILL and CLARK), B., 688.
Caoutchouc, and its isomerides and derivatives (STAUDINGER and WIDMER), A., 840; (STAUDINGER and GEIGER), A., 841.
 from latex of various plants (ULTEE), A., 1066.
 formula and ozonide of (EVERS), A., 1250.
 molecular magnitude of (OTT), B., 681.
 synthetic, structure of (KATZ), B., 956.
 molecular structure of (LINDMAYER), B., 714.
 Röntgen ray structure of (OSTWALD), B., 956.
 shell aggregation and colloidal crystallisation of (FEUCHTER), B., 100.
 swelling of, in various solvents (SALKIND), A., 576.
 gels, monophasic, relative rate of oxidation of raw rubber and (FEUCHTER), B., 204.
 hydrogenation of (STAUDINGER), (P.), B., 23.
 action of nitrogen tetroxide on (EMDEN), B., 137.
 reaction between sulphur and (WHITBY and JANE), B., 682.
 compositions (BIDDLE), (P.), B., 715.
 hydrocarbon, separation of, from rubber latex and its fractionation (PUMMERER), B., 597.
 nitrosate (EMDEN), B., 374.
 nitrosite-nitrosate, sols of (FISCHER), B., 838.
 from *Hevea*, resin of (WHITBY, DOLID, and YORSTON), A., 841.
 diffusion, vulcanisation of (FEUCHTER), B., 555.
 See also Rubber.
Caoutchouc, dinitro-, Weber's (EMDEN), B., 374.
Capillarity, phenomena of (DUBRISAY), A., 119.
 and evaporation (SCHULTZE), A., 1094.
 and wetting (SCHULTZE), A., 1094.
Capillary constant, Poisson's (DE KOLOSOVSKI), A., 1199.
Carabao, milk of, compressed with that of Indian buffalo (GOMEZ), A., 1269.
Caramel, formation of, in presence of nitrogen compounds (RIPP), B., 961.
 detection of coal-tar dyes in (v. NOËL), B., 294.
Camels, commercial (SEIMICH), B., 336.

- Carbamic acid, ammonium salt, production of (SYNTHETIC AMMONIA & NITRATES, LTD. and COXON), (P.), B., 979.
stabilisation of (A. & L. WELTER and WEINDEL), (P.), B., 487.
dipotassium salt (BLAIR), A., 277.
- Carbamic acids, preparation of esters of (KALLE & Co. and SPRÖNGERTS), (P.), B., 901.
- Carbamide (urea), constitution of (HUGERSHOFF), A., 156.
preparation of (CASALE), (P.), B., 27.
from cyanamide (GOLDSCHMIDT & v. VIETINGHOFF CHEM.-TECHN. GES.), (P.), B., 852.
synthesis of, from ammonium hydrogen carbonate (ABDERHALDEN and BUADZE), A., 1276.
manufacture of (KRASE, GADDY, and TOLMAN), (P.), B., 76; (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 420, 513.
vapour pressure and heat of dilution of aqueous solutions of (PERMAN and LOVETT), A., 127.
action of, on carbohydrates (HYND), A., 501.
and its derivatives, treatment of condensation products of formaldehyde and (POLAK), (P.), B., 22.
reaction of, with mesoxalic acid (BILTZ and SCHLIEMANN), A., 739.
reaction of sodium hypobromite with (DONALD), A., 54.
action of urease on (SUMNER), A., 758.
manufacture of salts of (BRESLAUER, GOUDET, and Soc. D'ÉTUDES CHIM. POUR L'IND.), (P.), B., 251*.
derivatives of (FROMM), A., 716.
additive compounds of sodium thiosulphate and (METZ, and METZ LABS.), (P.), B., 609.
and its derivatives, preparation of artificial resins from (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 99.
preparation of uracil from (DAVIDSON and BAUDISON), A., 1154.
formation of, by fungi (IVANOV), A., 97.
See also Urea.
- Carbamide, nitro- (WILLSTÄTTER and PFANNENSTIEL), A., 1129.
thio-. See Thiocarbamide.
- 2-Carbamido-6-arsino-1,2-dihydroquinoxaline, 3-amino- (LEWIS and BENT), A., 628.
- 7-Carbamido-5-methylindazole (v. AUWERS and FRESE), A., 529.
- Carbamyl chlorides, substituted, decomposition of, by hydroxy-compounds (PRICE), A., 481.
- 1-Carbamylcyclohexane-1'-carboxylic acid, and its methyl ester (WIGHTMAN), A., 1238.
- Carbanil, *o*-hydroxy-, absorption spectra of, and its ethers (MORTON and ROGERS), A., 9.
- Carbanilic acid, *o*-hydroxy-, butyl and propyl esters (NELSON and AITKENHEAD), A., 833.
- Carbanilide, thio-. See Thiocarbanilide.
- Carbanilino-*o*-methoxy- α -benzaloxime (BRADY and McHUGH), A., 69.
- Carbanilino-3,4-methylenedioxybenzaloximes (BRADY and McHUGH), A., 69.
- Carbazide, action of, on aromatic hydrocarbons (CURTIUS and BERTHO), A., 1152.
- Carbazines, syntheses of (GOLDSTEIN and RODEL), A., 1151.
- Carbazinic acid, dithio-, *o*-nitrobenzyl ester (BOSE), A., 1159.
- Carbazole, *di*- and *tri*-bromo-, amino-, chloro-, nitro-, and nitroso-, and their derivatives (LINDEMANN and MÜHLHAUS), A., 75.
3-*mono*- and 3,6-*di*-iodo-, and their derivatives (TUCKER), A., 622.
- Carbazoles, synthesis of (OAKESHOTT and PLANT), A., 843.
- Carbazole series, iodination in (TUCKER), A., 622.
- 1:9-Carbazole-2':3'-diketopiperazine, 3,6-*di*bromo- (LINDEMANN and MÜHLHAUS), A., 75.
- 1:9-Carbazole-3'-ketopiperazine, 3,6-*di*- and 3,6:8-*tri*-bromo- (LINDEMANN and MÜHLHAUS), A., 75.
- Carbazoletetrasulphonyl chloride (LUSTIG and KATSCHER), (P.), B., 964.
- Carbazoloic acids, derivatives of (FARBW. v. BAYER & Co.), (P.), B., 121.
- Carbazones. See 5:5-Diphenyldihydroacridines.
- 3-Carbethoxy-2-aldehyde-4-methylpyrrole-5-carboxylic acid (FISCHER and ERNST), A., 621.
- 4-Carbethoxyaminoanthraquinonyl-1-mercapto-5'-chlorobenzene-2-carboxylic acid (Soc. CHEM. IND. IN BASLE), (P.), B., 942.
- p*-Carbethoxyaminobenzoic acid, and its ethyl ester (BASTERFIELD and WRIGHT), A., 1138.
- 4-Carbethoxyamino-1:5':2'-chlorocarboxyphenylaminoanthraquinone (Soc. CHEM. IND. IN BASLE), (P.), B., 943.
- di*- α - and *p*-Carbethoxyaminophenylacetic acids, and their derivatives (BASTERFIELD and WRIGHT), A., 1138.
- 3-Carbethoxy-*n*-amylpiperidine, 4-hydroxy-, hydrochloride (McELVAIN), A., 1044.
- 3-Carbethoxy-1-*n*-amyl-4-piperidone (McELVAIN), A., 1044.
- 3-Carbethoxyisoamyl-4-piperidone hydrochloride (McELVAIN), A., 1044.
- 8-Carbethoxyanilinosemicarbazide hydrochloride, and its benzylidene derivative (BAIRD and WILSON), A., 1141.
- 3-Carbethoxybenzylacetylacetones, and their copper derivatives (MORGAN and PORTER), A., 836.
- 3-*m*-Carbethoxybenzylbutyrlacetone, and its copper derivative (MORGAN and PORTER), A., 836.
- 4-Carbethoxybispyridinium-1:1'-spiran bromide and picrate (MILLS and BAINS), A., 44.
- 3-Carbethoxybutylpiperidines, 4-hydroxy-, salts of (McELVAIN), A., 1044.
- 3-Carbethoxy-1-butyl-4-piperidones (McELVAIN), A., 1044.
- Carbethoxy- α -cinnamaloxime (BRADY and McHUGH), A., 69.
- Carbethoxydiglycylarsanilic acid (GIEMSA and TROPP), A., 1162.
- 5-Carbethoxy-2:4-dimethylpyrrole-3-acrylic acid (FISCHER and WALACH), A., 178.
- 5-Carbethoxy-2:4-dimethylpyrrole-3-azo- β -naphthol (FISCHER and STERN), A., 304.
- 5-Carbethoxy-2:4-dimethylpyrrole-3-carboxylic acid (FISCHER and WALACH), A., 178.
- p*-Carbethoxyethylaminophenylacetic acid, and its ammonium salt (BASTERFIELD and WRIGHT), A., 1138.
- 3-Carbethoxy-1-ethylpiperidine, 4-hydroxy-, and its benzoate hydrochloride (McELVAIN), A., 1044.
- 3-Carbethoxy-1-ethyl-4-piperidone (McELVAIN), A., 1044.
- β -Carbethoxyethylsuccinic acid, ethyl ester (WIRLAND and FISCHER), A., 46.
- Carbethoxyglycylarsanilic acid (GIEMSA and TROPP), A., 1162.
- Carbethoxyguanidine (BASTERFIELD and PAYNTER), A., 1027.
- α -Carbethoxy- γ -hydroxy- γ -phenyl- Δ^8 -propenecarboxylactone, and its α -acetyl derivative (R. M. and J. N. RAY), A., 168.
- p*-Carbethoxymethoxybenzhydramine, and its hydrochloride (TORRES y GONZALES), A., 396.
- 2-Carbethoxy-7-methoxyindole-3-acetic acid, ethyl ester (PERKIN and RUBENSTEIN), A., 394.
- 5-Carbethoxy-4-methyl-2-bromomethyl-3-pyrrylpropionic acid (FISCHER and ANDERSSON), A., 1262.
- Carbethoxy-2-methyl-6-*tert*.-butylpyridinecarboxylic acids, and their salts (MUMM and NEUMANN), A., 958.
- 5-Carbethoxy-4-methyl-2-ethylpyrrole-3- β -methylmalonic acid, and its ethyl ester (FISCHER and KLARER), A., 412.
- 4-Carbethoxy-3-methylpyrrole-5-carbamie acid, methyl ester (FISCHER and WIEDEMANN), A., 736.
- 4-Carbethoxy-3-methylpyrrole-5-carboxylic acid, potassium salt and derivatives of (FISCHER and WIEDEMANN), A., 736.
- 5-(3-Carbethoxy-2-methylpyrryl)carbinol (FISCHER and SCHUBERT), A., 736.
- 5-Carbethoxy-4-methyl-2-pyrrylcarbinol, 3-bromo-, esters of (FISCHER and ERNST), A., 621.
- β -5-(3-Carbethoxy-2-methylpyrryl)vinyl ketones (FISCHER and SCHUBERT), A., 737.
- N*-Carbethoxyphenylglycine, sodium salt (BASTERFIELD and WRIGHT), A., 1138.
- Carbethoxy-6-phenyl-2-methylpyridinecarboxylic acids, and their salts (MUMM and NEUMANN), A., 958.
- 3-Carbethoxy-1-propylpiperidines, 4-hydroxy-, and their salts (McELVAIN), A., 1044.
- 3-Carbethoxy-1-propyl-4-piperidones (McELVAIN), A., 1044.
- Carbethoxytriglycylarsanilic acid (GIEMSA and TROPP), A., 1162.
- 3-Carbethoxy-1:2:5-trimethylpyrrole-4-azobenzenesulphonic acid (FISCHER and STERN), A., 303.
- 2- ω -Carbethoxyvinylpyrrole, 2- ω -cyano- (FISCHER and SCHUBERT), A., 737.
- Carbides, manufacture of (EHRENBERG, WIEDERHOLD, KRUG, HOLSHOER, FISCHER, and STUDIENGES. F. AUSBAU DER IND.), (P.), B., 237.
reactions on heating, with alkaline-earth oxides (HEDVALL), A., 368; (HEDVALL and NORSTRÖM), A., 695.
- Carbimides (isocyanates), reaction of, with Schiff's bases (LANGE), A., 1158.
- Carbinols, condensation of phenol ethers with (SZÉKI), A., 285.
- Carboyanine dyes (GUTENKUNST, and EASTMAN KODAK Co.), (P.), B., 265.
- Carbodibenzidine, thio-, colouring matters from (ROSSI and CECCHETTI), A., 513.
- Carbohydrates (BRIGL and KEPLER), A., 941.

- Carbohydrates**, formation of, from fats (ASHER and CALVO-CRIADO), A., 198.
 complex, structure of (OTT), A., 460.
 hydrolysis and synthesis of (v. EULER and MYRBÄCK), A., 431.
 treatment of condensate from distillation of solutions of, containing hydrochloric acid (GOLDSCHMIDT A.-G., HÄGGLUND, and FÄRBER), (P.), B., 295.
 oxidation of (EVANS, BUEHLER, LOOKER, CRAWFORD, and HOLL), A., 148; (EVANS and BUEHLER; EVANS and HOLL), A., 149; (PALIT and DHAR), A., 822; (EVANS and HASS), A., 1226; (EVANS and WARING), A., 1227; (EVANS, EDGAR, and HOFF), A., 1228.
 by dyes and by alkaline potassium ferrieyanide (KNECHT and HIBBERT), A., 149.
 interaction of amino-compounds and (HYND), A., 501.
 action of sulphuric acid and guaiacol on (BRÜERE), A., 1026.
 metabolism of. See Metabolism.
 variations in, in green leaves (STANESCU), A., 439.
 utilisation of (DU VIGNEAUD and KARR), A., 192.
 by tissues (MAIGE), A., 754.
 exchange of, in animal tissues (MEYERHOF and LOHMANN); A., 753, 754; (TAKANE), A., 754.
 influence of, on insulin hypoglycæmia (MOSCHINI), A., 1063.
 determination of, colorimetrically, in organs and body-fluids (DISCHE and POPPER), A., 1282.
 determination of total solids in solutions of (ROTTINGER), B., 210.
 acid-hydrolysable, determination of, in tissues of green plants (MORRIS and WELTON), B., 930.
Carbohydrazide, thio-, condensations of aldehydes and ketones with (GUHA and DEY), A., 417.
4-Carbohydrazido-3-methylpyrrole-5-carboxylic acid (FISCHER and WIEDEMANN), A., 736.
Carboligase (BEHRENS and IVANOV), A., 544.
3-Carbomethoxy-1-carbethoxyindazole (v. AUWERS and STRÖDTER), A., 529.
5-Carbomethoxy-4-carbethoxy-3-methylpyrrole (FISCHER and WIEDEMANN), A., 736.
N-Carbomethoxyisatoic acid (HELLER and LAUTH), A., 957.
p-Carbomethoxyphenoxyacetic acid, amide and methyl ester of, and nitro-derivatives (CHRISTIANSEN), A., 518.
Carbon, occurrence of, in pre-Cambrian rocks (MOORE), A., 143.
 manufacture of, for electrodes (EHRENBERG, WIEDERHOLD, KRUG, HOLSBOER, FISCHER, and STUDIENGES. F. AUSBAU DER IND.), (P.), B., 284.
 production of substances containing boron and (PODSZUS), (P.), B., 539*.
 preparation of hydrocyanic acid and (POINDEXTER and CALIFORNIA CYANIDE Co.), (P.), B., 88.
 production of material containing silicon and (GEBR. SIEMENS & Co.), (P.), B., 322.
 spectrum of (LANG and SMITH), A., 649.
 in presence of neon (CAMERON), A., 333.
 K spectrum of (DAUVILLIER), A., 649.
 ultra-violet spectrum of (BOWEN and INGRAM), A., 1070.
 vacuum spark spectrum of (SAWYER and MARTIN), A., 1070.
 critical potentials for (COMPTON and THOMAS), A., 1186.
 atomic volumes of hydrogen and (SHORT), A., 994.
 vapour pressure of (ALTERTHUM and KOREF), A., 233.
 atoms, tetrahedral, stereochemistry of (KÜHN and ZUMSTEIN), A., 505.
 chains, alternating effect in (HOLMES and INGOLD), A., 829; (C. K. and E. H. INGOLD), A., 833; (HOLMES, and C. K. and E. H. INGOLD), A., 947; (BAKER and INGOLD), A., 1131; (INGOLD and WILSON), A., 1132.
 rings (RUZICKA), A., 614, 1143; (RUZICKA, STOLL, and SCHINZ), A., 615; (RUZICKA and BRUGGER), A., 615, 726; (RUZICKA, BRUGGER, PFEIFFER, SCHINZ, and STOLL), A., 727; (RUZICKA), A., 1143.
 influence of, on the velocity of reactions involving side-chains (GANT and INGOLD), A., 249.
 and its oxides, equilibria of, with iron and its oxides (SCHENCK), B., 633; (FALCKE and FISCHER), A., 634.
 equilibrium of manganese, phosphorus, and, in basic open-hearth process (HERTZ), B., 490.
 equilibrium of zirconium oxide with (PRESCOTT), A., 1209.
 eutectoid of iron and (RUEB), B., 748.
 effect of other elements on migration of, in steel (MAHIN, SPENCER, and HAYNER), B., 364.
Carbon and its compounds, treatment of, under heat and pressure (BERGIUS), (P.), B., 814.
 reduction of chromium sesquioxide and uranium dioxide by (HEUSLER), A., 909.
 active (RUFF), A., 346.
 manufacture of (RODMAN and RODMAN CHEMICAL Co.), (P.), B., 779; (NAGTEGAAL), (P.), B., 971; (NAAML. VENNOOTS. ALGEM. NORIT MAATS. and SAUER), (P.), B., 1003.
 heat of wetting of (ANDRESS and BERL), A., 910.
 reduction of organic compounds by (STADNIKOV, GAVRILOV, and VINOGRADOV), A., 60.
 adsorption, comparison of varieties of (HONIG), B., 859.
 aliphatic, direct hydration of (NELLENSTEYN), B., 35.
 amorphous, manufacture of (AARTS), (P.), B., 308.
 decolorising (SAUER), (P.), B., 41*.
 finely-divided, production of, at low temperatures (BRAUN-KOHLER PRODUKTE A.-G.), (P.), B., 907.
 liquid, vapour pressure and molecular heat of vaporisation of (HERBST), A., 670.
 lustre, density of (ROTH, NAESER, and DÖPKE), A., 894.
 See also Charcoal, Diamond, and Graphite.
Carbon alloys with chromium and iron (MEIERLING and DENECKE), A., 357; (v. VEGESACK), A., 799.
 with copper and iron (ISHIWARA, YONEKURA, and ISHIGAKI), A., 683.
 with iron, magnetism and specific resistance of (CAMPBELL), A., 17.
 Widmannstätten structure in (KASÉ), B., 277.
 influence of heat treatment and carbon content on the structure of (FINK and CAMPBELL), B., 919.
 A2 line in equilibrium diagram of (HONDA), B., 194.
 solidus line in equilibrium diagram of (KAYA), B., 325.
 dendritic segregation in (SAUVEUR and KRIVOBOK), B., 131*.
 with iron and silicon at high temperatures (BECKER), B., 132*.
 with molybdenum and tungsten, X-ray analysis of (WESTOREN and PHRAGMÉN), A., 1084.
Carbon compounds, influence of electron displacement on the reactivity of conjugated systems in (ROBINSON), A., 1245.
 bivalent (SCHEIBLER), A., 711.
 heteropolar (DILTHEY and BERRES), A., 727; (DILTHEY, BERRES, HÖLTERHOFF, and WÜCKEN), A., 1254.
 tervalent (ZIEGLER and SCHNELL), A., 57; (ZIEGLER and FRIES), A., 410; (ZIEGLER, FRIES, and SALZER), A., 955.
Carbon tetrachloride, preparation of, from methyl sulphide (CHEM. FABR. SCHERING), (P.), B., 28, 173.
 electrostriction in (PAUTHENIER), A., 230.
 heat of formation of (BODENSTEIN, GÜNTHER, and HOFFMEISTER), A., 910.
 miscibility of sulphur dioxide and (BOND and BEACH), A., 344.
 in pharmacy (TREASE and TINGEY), B., 803.
 effect of, on blood fibrin and levulose tolerance (LAMSON and WING), A., 1172.
 tetrafluoride (LEBEAU and DAMIENS), A., 710.
 formation of, in recovery of aluminium (TREADWELL and KÖHL), B., 671.
 suboxide (DIELS), A., 1015.
 monoxide, manufacture of (JOURDAN and GALL), (P.), B., 584; (LEONARZ), (P.), B., 732.
 spectrum of (JOHNSON), A., 334; (JASSE), A., 452.
 band spectrum of (DUNCAN), A., 991.
 band spectra of nitrogen and (NAGAOKA), A., 107.
 flame spectrum of (WESTON), A., 8.
 infra-red spectrum of (McLENNAN, SMITH, and PETERS), A., 107.
 infra-red emission spectrum of explosion of oxygen and (GARNER, JOHNSON, and SAUNDERS), A., 658.
 ionisation potential and electronic energy levels for (BIRGE), A., 224.
 energy levels of molecules of (DUFFENDACK and FOX; JOHNSON), A., 777.
 moment of inertia of (SCHAEFER and PHILIPPS), A., 556.
 adsorption of, by cuprous chloride solutions (MOSER and HANIK), A., 375.
 by Grignard reagents, in presence of chromic chloride (JOB and CASSAL), A., 917.
 equilibrium of zinc oxide and (MAIER and RALSTON), A., 358.
 catalytic dissociation of (CLEMINSON and BRISCOE), A., 1012.
 catalytic oxidation of (HOSKINS and BRAY), A., 807; (BRAY and DOSS), A., 917.

- Carbon monoxide**, oxidation of, by water in presence of palladium (TRAUBE and LANGE), A., 257.
 reduction of (JAEGER and WINKELMANN), B., 698; (TROPSCH, SCHELLENBERG, and PHILIPPOVICH), B., 776; (FISCHER and JAEGER), B., 777; (FISCHER and TROPSCH), B., 939.
 catalytic reduction of (ELVINS and NASH), A., 917.
 catalytic combination of oxygen and (BONE and ANDREW), A., 33, 250.
 influence of steam on catalytic combustion of (BONE), A., 1109.
 dried, combustion of mixtures of oxygen and (BONE and WESTON; BONE, FRASER, and NEWITT), A., 480.
 explosions of mixtures of air and, in a closed vessel (FENNING), B., 258.
 action of Grignard reagents on, and its mixtures with nickel carbonyl (GILLILAND and BLANCHARD), A., 603.
 catalytic action of iron ores in decomposition of (FARUP), B., 490.
 action of, on palladium and platinum salts (MANCHOT), A., 138.
 compound of, with palladium chloride (MANCHOT and KÖNIG), A., 698.
 with potassium cobaltocyanide (MANCHOT and GALL), A., 694.
 with potassium nickelocyanide (MANCHOT and GALL), A., 698.
 diethylacetal. See Diethoxymethylene.
 motor fuel from hydrogen and (ELVINS and NASH), B., 570.
 synthesis of organic compounds from (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 512, 721*.
 biochemical decomposition of (WEHMER), A., 759.
 detection of, in firedamp, combustion gases, and after-damp (WEIN), B., 225.
 detection and determination of (KAST and SELLE), A., 1018.
 determination of (KATZ), (P.), B., 430; (DAVIES and HARTLEY), B., 537; (INSTITUTION OF GAS ENGINEERS), B., 1002.
 determination of, in hydrogen (SCHUFTAN), B., 405.
 determination of, in air of workshops (SCHOOFS), B., 934.
 determination of, in blood and air (SAYERS and YANT), A., 100.
 separation of, from industrial gases (DAMIENS), (P.), B., 477, 1014.
dioxide in the atmosphere (LEGENDRE), A., 143.
 production of (CANADIAN PRESS-AIR, LTD., JOHNSTON, and POPE), (P.), B., 666.
 manufacture of preparations evolving (RIEDEL A.-G.), (P.), B., 297.
 absorption spectrum and molecular structure of (SCHAEFER and PHILIPS), A., 653; (DENNISON), A., 882.
 infra-red absorption spectrum of (DENNISON), A., 222.
 molecular spectrum of (ELLIS), A., 774.
 action of a magnetic field on refractive index of (GHOSH and MAHANTI), A., 1194.
 electric moment of (ZAIN), A., 565.
 decomposition of, by spark discharge (JOLIBOIS, LEFEBVRE, and MONTAGNE), A., 586, 680.
 specific heat of, at the critical point (BENNEWITZ and SPLITTGERBER), A., 1210.
 solid and liquid, thermal constants of (MAASS and BARNES), A., 668.
 crystal structure of (MCLENNAN and WILHELM), A., 13.
 molecular configuration of (EUCKEN), A., 882.
 monatomic molecules of (v. WISNIEWSKI), A., 1194.
 adsorption of, by activated coconut charcoal (ROWE), A., 572.
 and its mixtures with hydrogen by wood charcoal (MAGNUS and ROTH; MAGNUS and BRAUER), A., 346.
 by colloidal solutions (GATTERER), A., 347.
 by pyrophoric metals (NIKITIN), A., 673.
 stability of solutions of (TANANAEV), A., 240.
 evacuation of water vapour and (CAMPBELL), A., 570.
 combustion of (BONE), B., 809.
 assimilation of, by plants (HOLLUTA), A., 1011; (NELLENSTEYN), B., 35.
 assimilation of, by *Chlorella* (WARBURG), A., 325.
 rôle of, in plant growth (REINAU), B., 558.
 effect of, on yield of plants (RIFFEL; GERLACH; EHRENBORG), B., 378.
 influence of, on plant respiration (THOMAS), A., 208.
Carbon dioxide of soils, importance of, for nutrition of plants (LEMMERMANN), B., 378.
 tension of, in animal tissues (CAMPBELL), A., 537.
 effect of exercise on alveolar tension of (CORDERO), A., 854.
 apparatus for determination of (UNDERWOOD), B., 977.
 determination of, in carbonates (v. BRUCHHAUSEN), A., 591.
 determination of, in flue-gases (SCHMIDT, HUTTON, and CUTLER-HAMMER MANUF. CO.), (P.), B., 262.
 determination of, in respiration (MCCLENDON, HUMPHREY, and LOUCKS), A., 1067.
 determination of, with the micro-respiration apparatus (GAARDER), A., 1221.
 determination of, in distilled water (KOLTHOFF), A., 1018.
 mono- and di-oxides, action of radon on mixtures of ammonia with (BAILEY), A., 254.
 oxides, chemical action of, in presence of radon (LIND and BARDWELL), A., 4.
 catalytic adsorption of (HOSKINS and BRAY), A., 807.
 equilibrium of austenite with (TAKAHASHI), B., 670.
 catalysts for hydrogenation of (PATART), (P.), B., 351.
Carbonic acid, variation of dissociation constants of, with ionic strength (HASTINGS and SENDROY), A., 25.
 determination of, in distilled water (KOLTHOFF), A., 1116.
Carbonic acid, trithio-, benzyl and ethyl esters (WERTHEIM), A., 497.
Carbonic acids, dithio-, and their salts, constitution of (HANTZSCH and BUCERIUS), A., 598.
Carbonates, preparation of soluble (MEYERHOFER, and DE HAEN A.-G.), (P.), B., 12; (MEYERHOFER), (P.), B., 126.
 production of hydroxides and (BUCHNER), (P.), B., 1013.
 crystalline, birefringence of (RAMAN), A., 994.
 thermal decomposition of (BRUŽS), A., 692.
 and acid carbonates, detection of (GASPAR Y ARNAL), A., 928.
 basic, electrometric precipitation of (BRITTON), A., 247.
 hydrogen, production of formic acid in hydrogen-ion determinations of (MARTIN and LEPPER), A., 1212.
Carbon disulphide, manufacture of (RABE), B., 874.
 apparatus for (SCHULZ), (P.), B., 823.
 from ammonium thiocyanate (DU BOIS), (P.), B., 360.
 origin of, in carbonisation of coal (HUFF), B., 427.
 gaseous, refraction and dispersion of (LOWERY), A., 1032.
 ultra-violet dispersion of (BRUHAT and PAUTHENIER), A., 886.
 phosphorescent flame of (DIXON and HIGGINS), A., 10.
 latent heat of fusion of (MITSUKURI and AOKI), A., 668.
 solid, crystal structure of (DE SMEDT), A., 1195.
 occurrence of sparks during crystallisation of (ANSCHÜTZ), A., 486.
 reactions of (WERTHEIM), A., 497.
 detection and determination of traces of (HUFF), B., 146.
 determination of, in gases from decomposition of viscose (HEGEL), B., 399.
Carbon determination :—
 determination of, in coal (KING and MACDOUGALL), B., 115.
 determination of, in iron and its alloys (SCHIFFER), B., 492.
 determination of, in organic compounds (LOCHE; BERL and BURKHARDT), A., 749.
 determination of, in urine (KAUFFMANN-COSLA and LEIBOVITZ), A., 327.
Carbon black, manufacture of (MESSENGER and STANDARD DEVELOPMENT CO.), (P.), B., 450; (SNELLING), (P.), B., 889; (JAKOWSKY), (P.), B., 924.
 for use in the manufacture of rubber and rubber goods (WARD), (P.), B., 796.
 grading of (PRICE and HUBER CO.), (P.), B., 595.
 American, substitute for, in rubber mixings (WIEGAND), B., 890.
 high and low stiffening, in rubber mixings (SPEAR and MOORE), B., 452.
Carbon steel. See Steel under Iron.
Carbonaceous materials, treatment of (TRENT), (P.), B., 732.
 cleaning of (LAING and NIELSEN), (P.), B., 620.
 modification of ignition temperature of (DERBY, EDWARDS, and REILLY), (P.), B., 476.
Carbonado, density of (ROTH, NAESER, and DÖPKE), A., 894.
Carbonates and **Carbonic acid**. See under Carbon.
Carbonisation, studies in (INSTITUTION OF GAS ENGINEERS), B., 1001.
 process of (THERMAL, INDUSTRIAL, and CHEMICAL RESEARCH Co. and RIDER), (P.), B., 621.

- Carbonisation, thermal analysis of (WINTER), B., 569.
 of fuel (KRAUSS), (P.), B., 117; (RUDE), (P.), B., 119; (ILLINGWORTH, ILLINGWORTH CARBONIZATION CO., DEMPSTER & SONS, and TOOGOOD), (P.), B., 228, 428; (MERZ & McLELLAN and RILEY), (P.), B., 429.
 of bituminous substances (LEITNER), (P.), B., 229; (BESTA), (P.), B., 232*.
 of carbonaceous materials (WINZER and BROWN), (P.), B., 523.
 of wood, peat, and shale (NORDDEUTS. TORFKOKEREI), (P.), B., 229.
 low-temperature (BROWNLIE), B., 651.
 apparatus for (YOUNG), (P.), B., 4.
 at the Sarre mines (ST. CLAIRE DEVILLE), B., 347.
 in vertical retorts (RUDE), (P.), B., 429; (FUEL RESEARCH BOARD), B., 730; (RHEAD), B., 969.
 Carbonisation apparatus (HERTEL), (P.), B., 429; (LEISSNER), (P.), B., 861; (ODELL), (P.), B., 940.
 kilns (DOBDELSTEIN and HESS), (P.), B., 4, 6*.
 plant, standpipe apparatus for (VAN ACKEREN, and KOPFERS Co.), (P.), B., 524.
 operation of combined gasification and (ILLIG), (P.), B., 229.
 at the Leopold Collieries, Edderitz (SANDER), B., 969.
 retorts. See under Retorts.
 Carbonyl azide, action of, on aromatic hydrocarbons (CURTIUS and BERTHO), A., 508.
 chloride (*phosgene*), critical constants and vapour tension of (GERMANN and TAYLOR), A., 670.
 compounds, reduction of, by chromous and vanadous salts (CONANT and CUTTER), A., 616.
 aromatic, catalytic hydrogenation of, in presence of copper (KUBOTA and HAYASHI), A., 520.
 groups, magnetic properties of (PASCAL), A., 227.
 catalytic hydrogenation of, in aromatic compounds in presence of copper (KUBOTA and HAYASHI), A., 727.
 determination of, iodometrically (ARDAGH and WILLIAMS), A., 189.
 Carbonylbenzidine, derivatives of (LE FÈVRE and TURNER), A., 1131.
 Carbonylchlorocruorin (FOX), A., 313.
 Carbonyldicarbamide, potassium derivatives (BLAIR), A., 277.
 Carborundum. See Silicon carbide.
 Carboxystyryl (2-hydroxyquinoline), absorption spectra of, and its ethers (MORTON and ROGERS), A., 9.
 Carboxystyryl, 3-thiol-, and its derivatives (GRÄNACHER, OFNER, and KLOPFENSTEIN), A., 81.
p-Carboxyamidophenoxyacetamide (CHRISTIANSEN), A., 518.
 3-*m*-Carboxybenzylacetone (MORGAN and PORTER), A., 836.
 3-*m*-Carboxybenzylacetylacetone, and its copper derivative (MORGAN and PORTER), A., 836.
 3-*m*-Carboxybenzylbutyrylacetone, and its beryllium and copper derivatives (MORGAN and PORTER), A., 836.
 2-*o*-Carboxybenzyl-1-hydrindone phenylhydrazide (LEUCHS and KOWALSKI), A., 293.
 4-Carboxybispyridinium-1:1'-spiran bromide and picrate (MILLS and BAINS), A., 44.
o-Carboxycinnamitrile (EDWARDS), A., 835.
 β -Carboxycinnamylhydroxamic acid, derivatives of (NEBER and PAESCHKE), A., 1120.
 Carboxydidiglycylarsanilic acid (GIEMSA and TROPP), A., 1162.
 β -(2-Carboxydimethoxyphenyl)ethylamines, β -hydroxy-, and their lactones, and their salts and derivatives (EDWARDS), A., 735.
 β -(2-Carboxydimethoxyphenyl)ethylcarbamio acids, β -hydroxy-, ethyl ester lactones (EDWARDS), A., 735.
 β -(2-Carboxydimethoxyphenyl)ethylmethyamines, β -hydroxy-, and their lactones, and their salts and derivatives (EDWARDS), A., 735.
 Carboxyglycylarsanilic acid (GIEMSA and TROPP), A., 1162.
 Carboxyhæmoglobin, spectrum of (DOLLMEYER and FOURNIER), A., 1080.
 action of potassium ferriocyanide on (NICLOUX and ROCHE), A., 191.
 1-Carboxycyclohexane-1-acetic acid, derivatives of (ROTHSTEIN and THORPE), A., 1039.
o-Carboxy- α -hydroxycinnamic acid *p*-nitrophenylhydrazide (ROWE, LEVIN, BURNS, DAVIES, and TEPPER), A., 626.
 β -(2-Carboxy-3:4-dihydroxyphenyl)ethylamine, β -hydroxy-, and its hydrochloride (EDWARDS), A., 735.
 4-Carboxy-2-ketocyclopentylmethylsuccinic acids, and their derivatives (INGOLD and SHORPPE), A., 1039.
 Carboxyl groups, structure of (STEOPOE), A., 834.
 Carboxylase, action of ether on (KERR and YOUNG), A., 1277.
N-Carboxylic anhydrides, α -amino- (WESSELY and SIGMUND), A., 1235.
 2-Carboxymethoxyindoleacetic acids (PERKIN and RUBENSTEIN), A., 394.
 2-Carboxy-6-methoxyphenyl methyl carbonate (MAUTHNER), A., 404.
 $\alpha\alpha'$ -Carboxymethyliminodipropionic acid, and its copper salt (SCHEIBLER and NEEF), A., 943.
p-Carboxyphenoxyacetic acid amide, and 2-nitro-, methyl ester (CHRISTIANSEN), A., 518.
 5-Carboxyphenoxyacetic acid, 2:3-dihydroxy-, and its methyl ester (CHRISTIANSEN), A., 725.
 antimony compound of (CHRISTIANSEN), A., 722.
dl-*m*-Carboxyphenyl methyl sulphoxide, resolution of, and its salts and derivatives (HARRISON, KENYON, and PHILLIPS), A., 1031.
 Carboxyphenylaminoanthraquinone, 4-amino-1:5':2'-chloro- (Soc. CHEM. IND. IN BASLE), (P.), B., 943.
 1-(2-Carboxyphenyl)-4-aminonaphthalene, 1:4-amino- (CASSELLA & Co.), (P.), B., 434.
 Carboxyphenylcarbamio acids, ethyl esters, preparation of chlorides of (ÉTABL. POULENC FRÈRES), (P.), B., 898.
o-Carboxyphenylethylamines, substituted (EDWARDS), A., 735.
o-Carboxyphenylglyceric acid, sodium bismuth salt (MACHMANN), A., 311.
d-, *l*-, and *dl*-*p*-Carboxyphenylmethylethylarsine sulphides, and their salts (MILLS and RAPER), A., 186.
o-Carboxyphenylsulphonylacetic acid, and its derivatives (ARNDT, KIRSCH, and NACHTWEY), A., 843.
m-Carboxyphenylsulphuric acid, potassium salt (BURKHARDT and LAPWORTH), A., 511.
 2-Carboxypyridinethiolacetic acid, and its silver salt (PLAZEK and SUCHARDA), A., 1263.
 2-Carboxy-4-thiophenazo- β -naphthol, acetyl derivative (STEINKOPF and MÜLLER), A., 956.
o-Carboxy-*p*-tolylthiolacetic acid (KROLLPFEIFFER, SCHULTZE, and SOMMERMEYER), A., 167.
 Carbo process of photography, theory of (TRITTON), B., 388.
 Carburetors, water-gas, checker bricks for (PARMELEE and WESTMAN), B., 632.
 Carbylamines (isonitriles; isocyanides) (PASSERINI), A., 175, 952.
 Carcases, working up of (STEINMANN), (P.), B., 848.
 Carcinoma. See Cancer.
 Cardiazol. See Pentamethylenetetrazole.
 Carnation. See *Dianthus caryophyllus*.
 Carnosine, and its compounds (BROUDE), A., 1265.
 in meat extract, effect of, on gastric secretion (KRIMBERG and KOMAROV), A., 752.
 Carob seeds, extraction of gum from (Soc. ANON. ÉTABL. AUDIBERT), (P.), B., 642; (AUDIBERT), (P.), B., 764*.
 Carone, reduction of (IYER and SIMONSEN), A., 1042.
 Caro's reagent. See Potassium permanganate.
 Carotol, and its dibromide, and dihydroxy-, and its benzoate (ASAHINA and TSUKAMOTO), B., 340.
Carpinus betulus (hornbeam), constituents of the bark of (ZELLNER), A., 983.
Carpotroche brasiliensis, oil of (ANDRÉ), B., 98.
 Carrollite, identity of linnæite with (SHANNON), A., 709.
 Carrot. See *Daucus carota*.
 Cartridges (BROWNSON and NOBELS' EXPLOSIVES Co.), (P.), B., 142.
 blasting, liquid-air, for use in presence of coal dust and fire-damp (SPRENGLUFT Ges.), (P.), B., 388.
Carum copticum, ajowan cake from seeds of, as fertiliser (REGE), B., 335.
 Carvacrol, α -naphthylurethane from (FRENCH and WIRTEL), A., 830.
 Carvomenthols, isomeric, and their esters (PAOLINI), A., 298.
 Caryophyllene, derivatives of (HENDERSON, ROBERTSON, and KERR), A., 299.
 β -Caryophyllene, action of chromyl chloride on (GIBSON, ROBERTSON, and SWORD), A., 299.
 Caryophyllenes, and their derivatives (DEUSSEN), A., 1252.
 Caryophyllene alcohol (HENDERSON, ROBERTSON, and KERR), A., 298.
 Caryophyllene alcohols, occurrence of, in nature (ROBERTSON), A., 1042.
 Caryophyllene series (HENDERSON, ROBERTSON, and KERR), A., 298.

- Caryophyllol, and its dibromide (HENDERSON, ROBERTSON, and KERR), A., 299.
- Case-hardening (MERTON; ALLGEM. ELEKTRICITÄTS-GES. and BLONBERG), (P.), B., 329.
- box for use in (MCQUIGG and ELECTRO METALLURGICAL Co.), (P.), B., 283.
- Casein, manufacture of (DUNHAM and CASEIN MANUF. Co.), (P.), B., 383.
- recovery of, from its compound with formaldehyde (INTERNAT. GALALITH-GES. HOFF & Co., BARTELS, and EBERHARDT), (P.), B., 335.
- production of colloidal solutions of (v. WEIMARN), A., 1203.
- enzymic hydrolysis of (WALDSCHMIDT-LEITZ and SIMONS), A., 1049.
- action of organic acids on (ISGARISCHEV and BOGOMOLOVA; ISGARISCHEV and POMERANZEVA), A., 472.
- edible alkali compounds of (ZOLLER), (P.), B., 963.
- curd, apparatus for drying (FOSTER and VERMONT CASEIN PTY.), (P.), B., 253*.
- technical, determination of free acid and fat in (HÖPFNER and JAUDAS), B., 509.
- Caseinogen, effect of temperature and hydrogen-ion concentration on hydrolysis of (CARPENTER), A., 631.
- coagulation of, and the replaceability of calcium and potassium (MARUI), A., 866.
- digestion of, by pepsin (SMORODINCEV and ADOVA), A., 94, 202.
- inhibition of the peptic hydrolysis of (SMORODINCEV and RIABOUSCHINSKI), A., 433.
- liberation of phosphorus from (RIMINGTON and KAY), A., 970.
- compounds of alkaline earths with, and their transport numbers (GREENBERG and SCHMIDT), A., 242.
- calcium phosphate complexes of (PORCHER), A., 677, 795.
- sodium compound, membrano hydrolysis of (STARLINGER), A., 631; (PÓLÁNYI; PAULI), A., 674.
- Cassiterite, crystal structure of (VEGARD), A., 663.
- determination of tin in (PIRLOR), B., 921.
- Cast iron. See under Iron.
- Castor beans, hydrolysis of esters by (LORBERBLATT and FALK), A., 866.
- Castor oil, preparation of emulsifying agents from (AUBRY), (P.), B., 286.
- separation of ricinoleic acid from fatty acids of (INOKUCHI), B., 285.
- Castor oil plants, effect of thorium-X on (AVERSENQ, JALoustRE, and MAURIN), A., 647.
- Catalase in blood of mountain and valley dwellers (ALEXEEV), A., 855.
- content of warm-blooded animals and evergreen trees (BURGE), A., 541.
- content of, in bacteria (VIRTANEN and KARSTRÖM), A., 96.
- action of light on (PINCUSSEN and SELIGSOHN), A., 432.
- effect of temperature on action of (MORGULIS, BEBER, and RABKIN), A., 976.
- changes in the activity of, in blood (PINCUSSEN and SELIGSOHN; PINCUSSEN; KULTJUGIN), A., 432.
- activity of, and its relation to oxidation (HENNICH), A., 756, 1175.
- activity and iron content of (HENNICH), A., 432.
- in relation to respiration (WARBURG), A., 633.
- action of, in autotrophic plants (GRACANIN), A., 422.
- determination of, in bacteria (KIRCHNER and NAGEL), A., 979.
- Catalase number of natural and separated cream (HEKMA), B., 337.
- Catalysis (RUSSELL), A., 133; (MITTASCH), A., 250; (HORIUCHI and UYEDA), A., 292; (BÜSEKEN), A., 806.
- theory of (MEREJKOVSKI), A., 364; (v. EULER and ÖLANDER), A., 580, 1108.
- deformation of molecules in (ZELINSKI and TITZ), A., 277.
- kinetics of (SPITALSKY), A., 1011.
- displacement of equilibria by accelerators for (SCHLESINGER), A., 1109.
- promoter action in (FRYLING), A., 800.
- acid and salt effects in (DAWSON and CARTER), A., 1108.
- in buffer solutions (KILPATRICK), A., 919.
- in electrochemistry (PERSON), A., 804.
- industrial development of (TAYLOR), B., 807.
- with varying catalysts (QUARTAROLI), A., 133.
- by ions of inert gases (LIND and BARDWELL), A., 990.
- by metals of the platinum group (LEVI and HAARDT), A., 365.
- Catalysis by heavy metals (WERTHEIMER), A., 582.
- apparatus for (LEGG, HANCOCK, and COMMERCIAL SOLVENTS CORP.), (P.), B., 857.
- contact (REMY and GÖNNINGEN), A., 134; (TAYLOR), A., 365.
- gaseous (LIND and BARDWELL), A., 581.
- homogeneous, promoter action in (ROBERTSON), A., 917.
- surface, in photochemical processes (HIRST and RIDEAL), A., 34.
- Catalysts, preparation of (WOLF), (P.), B., 145; (PATRICK and SILICA GEL CORP.), (P.), B., 346*.
- for Heslinga's determination of elements (SAUERBIER), A., 582.
- life of (BRIERS, CHAPMAN, and WALTERS), A., 484.
- inactivation of (ZELINSKI and TUROVA-POLLAK), A., 365.
- lowering of heat of activation of reactions by (BURK), A., 915.
- in micro-heterogeneous systems (GALECKI and BINGER; GALECKI and KRZECZKOVSKA), A., 251.
- from plasmophile materials (HAHN), A., 1216.
- carriers for (STELLING), (P.), B., 858.
- poisoning of (BAKH), A., 1012.
- for synthesis of ammonia (CARRARA), (P.), B., 155; (CEDERBERG and NORSK HYDRO-ELEKTRISK KVAELSTOFAKTIESELSKAB), (P.), B., 236.
- thermionic properties of mixtures used as (KUNSMAN), A., 685.
- for production of light hydrocarbons from heavy mineral oils and shale oils (GRISARD), (P.), B., 231.
- adsorbent, for production of hydrocarbons (PÉTROLE SYNTHÉTIQUE), (P.), B., 147.
- for hydrogenation, production of (RIEDEL), (P.), B., 346.
- spent, fat from (STIEPEL), B., 247.
- of carbon oxides (PATART), (P.), B., 351.
- metallic, production of (LUSH and TECHNICAL RESEARCH WORKS, LTD.), (P.), B., 650*.
- nickel, preparation of (RANEY), (P.), B., 81.
- platinum-ruthenium (GES. F. NAUTISCHE INSTRUMENTE and MARTENSSEN), (P.), B., 145.
- for decomposition of potassium chlorate (BURROWS and BROWN; ROGINSKI and SCHULZ; BELENKI), A., 916; (PISARSHVSKI), A., 917.
- Catalytic action (HARA), A., 918.
- mechanism of (MIYAMOTO), A., 915.
- surface nature of (LEVI and HAARDT), A., 1012.
- immobile groups of atoms as cause of (CONSTABLE), A., 250.
- activity of absorbed substances (CHARRIOT), A., 1200.
- combustion. See under Combustion.
- decomposition in closed vessels (CONSTABLE), A., 250.
- dehydrogenation (WIELAND and FISCHER), A., 806.
- hydrogenation in presence of nickel salts (v. BRAUN and BAYER), A., 172, 729, 1253.
- of acid chlorides (ZETZSCHE, FLÜTSCH, ENDERLIN, and LOOSLI), A., 402.
- of aromatic acids and their salts (IPATIEV and RAZUBAIEV), A., 400.
- of carbonyl groups (KUBOTA and HAYASHI), A., 520, 727.
- of conjugated double linkings (VAVON and JAKES), A., 934.
- of organic compounds (SCHMIDT), A., 134; (KLINO and FLORENTIN), A., 381.
- of unsaturated fatty acids (TOYAMA and TSUCHIYA), B., 286.
- oxidation (PALIT and DHAR), A., 822.
- of organic compounds (DOWNS), B., 767; (P.), B., 851.
- phenomena, production of, by means of solar or ultra-violet rays (ROUSSEAU), (P.), B., 406.
- reactions (HAGGENMACHER), (P.), B., 33; (ELLINGER), (P.), B., 729.
- behaviour of centres of activity of surfaces during (CONSTABLE), A., 582.
- material for effecting (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 33.
- relation of homogeneous reactions to (HINSHELWOOD and BURK), A., 133.
- in gases under pressure, apparatus for effecting (PATART), (P.), B., 346.
- exothermic (GIBBS and DU PONT DE NEMOURS & Co.), (P.), B., 1029.
- gaseous (SYNTHETIC AMMONIA & NITRATES and HUMPHREY), (P.), B., 821; (SYNTHETIC AMMONIA & NITRATES and SLADE), (P.), B., 822.
- Cataphoresis (KELLER), A., 353.
- determination of (HUMPHREY), A., 577.

- Cataphoresis and adsorption (VAN DER GRINTEN), A., 467.
 of colloidal solutions (IVANITZKAJA and PROSKURNIN), A., 679.
 of colourless sols (DUMANSKI and KNIGA), A., 679; (HUMPHRY and JANE), A., 1204.
- Catechin, constitution of (NIERENSTEIN), A., 954.
 derivatives, molecular rearrangement of (FREUDENBERG, CARRARA, and COHN), A., 73.
- Caterpillars, tent, insecticidal value of war chemicals for (BRINLEY), B., 926.
- Cat-fish. See *Ameiurus*.
- Cathodes, sputtering of (v. HIPPEL; GÜNTHER-SCHULZE), A., 1013.
 sputtering of, in hydrogen (GÜNTHER-SCHULZE), A., 693.
 mercury, hydrogen overvoltage at (MCAULAY and BOWDEN), A., 804.
 in electrolytic oxidation (STSCHEBAKOV), A., 248.
 dropping mercury, analysis with (HEYROVSKÝ), A., 590.
 oxide, cooling effect on (MICHEL and SPANNER), A., 218.
 escape of electrons from (ROTHER), A., 653, 989.
 for discharge tubes (N. V. PHILIPS GLOEILAMPENFABR.), (P.), B., 757.
 thermionic, manufacture of (GEN. ELECTRIC Co. and SMITHELLS), (P.), B., 19.
 of vacuum tubes, cores for (REEVE and WESTERN ELECTRIC Co.), (P.), B., 135.
- Cathode rays. See under Rays.
- Cattle, nutritive value of proteins in various tissues of (HOAGLAND and SNIDER), B., 846.
 emaciated, chemistry of flesh of (HOAGLAND and POWICK), B., 846.
- Cauliflower, nitrogenous constituents of buds of (MCKEE and SMITH), A., 1183.
- Ceanothus americanus*, alkaloids of (CLARK), A., 548.
- Cedrene, action of chromyl chloride on (GIBSON, ROBERTSON, and SWORD), A., 299.
- Cedriret, dichloro-. See 3:5:3':5'-Tetramethoxydiphenquinone, 2:2'-dichloro-.
- Celery, changes in, during storage (CORBETT and THOMPSON), B., 846.
 nitrogenous constituents of, in health and disease (COONS and KLOTZ), A., 210.
- Celestine, structure of (JAMES and WOOD), A., 13.
- Cell or Cells, electrochemical (LEVIN and GAS INDUSTRIES Co.), (P.), B., 19; (COWLES), (P.), B., 134; (KNOWLES), (P.), B., 135*; (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 246; (CONRAD and SCHOENMEHL), (P.), B., 284; (OPPENHEIM and SOC. ANON. LE CARBONE), (P.), B., 332*; (PETZ and ELEKTROTRITÄTS A.-G. SCHUCKERT & Co.), (P.), B., 413*; (GAISER), (P.), B., 446.
 study of electrical condition of (KELLER), A., 353.
 electrode capacity and resistance of (BANERJI), A., 246.
 depolariser for (SOC. ANON. LE CARBONE), (P.), B., 550.
 diaphragms for (WILDERMAN), (P.), B., 164*.
 purification of filter diaphragms in (SIEMENS & HALSKE and WEYL), (P.), B., 498.
 rendering impermeable substances for absorbing gas in (STREET and SOC. ANON. LE CARBONE), (P.), B., 66*; (OPPENHEIM and SOC. ANON. LE CARBONE), (P.), B., 332*.
 for cellulose deposition (TAYLOR and TAYLOR LABORATORIES; TAYLOR, CHANDLER, and TAYLOR LABORATORIES), (P.), B., 835.
 starting of, for refining metals (TILSON and ALUMINUM Co. OF AMERICA), (P.), B., 246*.
 containing sulphate solutions without liquid junction (ÅKERLÖF), A., 688.
 $M[MO][NaOH]H_2(Pt)$, electromotive force of (FRIED), A., 1105.
 alternating-current (HEDGES), A., 912.
 copper oxide (HEISE and NAT. CARBON Co.), (P.), B., 164.
 double-fluid (DARIMONT), (P.), B., 551.
 dry (MARKIEWICZ and RÖMER), (P.), B., 835*.
 lead, polarisation in (BURT-GERRANS and HUGILL), A., 31.
 rectifying, electrolyte for (CARPENTER and WILLIARD STORAGE BATTERY Co.), (P.), B., 1019.
 Eppley standard, at high temperatures (VOSBURGH), A., 688.
 Weston standard, temperature formula for (VOSBURGH), A., 688.
 zinc-sulphuric acid-carbon, effect of superposed alternating current on (ALLMAND and COCKS), A., 912.
- Cell or Cells, photo-electric, spectral distribution of the sensitivity of (LEONTIEV), A., 224.
- Cell or Cells, photo-electric, production and control of ionisation in (TYKOCINER and KUNZ), A., 1073.
 with fluorescent electrolytes (GRUMBACH), A., 913.
 location of electromotive force in (MURDOCK), A., 1009.
 variation of potential in (RULE), A., 361.
 with unalterable electrodes (SCHLIVITCH), A., 579.
 potassium-coated (ALBERS), A., 3.
 selenium, sensitivity of (BAKER), A., 706; (RANKINE), A., 815.
 silver iodide (GARRISON), A., 34.
- Cell or Cells, physiological (CHAMBERS and REZNIKOFF), A., 759.
 effect of radioactivity on energy and metabolism of (STOKLASA), A., 91.
 oxidation-reduction in (WURMSER), A., 1055.
 oxidation-reduction potential of (J. and D. M. NEEDHAM), A., 545.
 reduction potentials of suspensions of (CANNAN, COHEN, and CLARK), A., 1009.
 micrurgy of (REZNIKOFF), A., 1173.
 effect of hydrogen sulphide on processes in (NEGELEIN), A., 434.
 carbohydrate nutrition of (MAIGE), A., 754.
 lipins in (MACDOUGAL), A., 1172.
 effect of neutral salts on (BOAS), A., 1276.
 pharmacology of the respiration of (ELLINGER and LENZBERG), A., 863.
 living, permeability of (BROOKS), A., 639.
 oxygen transport in (WILLSTÄTTER), A., 1176.
- Cellobiose of barley malt (PRINGSHEIM and BEISER), A., 976.
 Cellobionitrile, octa-acetyl derivative (ZEMPLÉN), A., 823.
 Cellobiose, constitution and derivatives of (ZEMPLÉN), A., 822.
 Cellosibiose (OST), A., 1127.
- Cellosan (PRINGSHEIM, LEIBOWITZ, SCHREIBER, and KASTEN), A., 942.
- Cellobiose (OST), A., 1127.
- Celluloid, cellulose fibre and tissue paper as materials for (ATSUKI), B., 46.
 sulphite tissue paper for manufacture of (ATSUKI and ISHIIHARA), B., 738.
 gelatinisation of cellulose nitrate in (PARODI-DELFINO), (P.), B., 693.
 films, preparation of (TAYLOR), A., 1118.
 substitutes from cellulose esters or ethers (ROMAHN), (P.), B., 580.
- Cellulose (HESS and SCHULTZE), A., 715; (HESS), A., 1125; (MICHEEL and HESS), A., 1230.
 Röntgen ray structure of (OTT), A., 387, 782; (HERZOG), A., 563, 677, 781, 782.
 constitution of (PRINGSHEIM, LEIBOWITZ, SCHREIBER, and KASTEN), A., 942; (GRAY), A., 1026.
 molecular dimensions of (BRUNSWIG), A., 1026.
 extraction of (CLARK and ERLANGER), (P.), B., 661.
 from bamboo (FESTER and MAIDANA), B., 267.
 from wood (ATSUKI and MINAKI), B., 266.
 from oleaginous materials (DAVID and FÉLIZAT), (P.), B., 1020*.
 manufacture of (BRADLEY and MCKEEFE), (P.), B., 153; (SCHMIDT), (P.), B., 315; (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 401.
 by use of chlorine (SCHACHT), B., 45.
 chlorinated products from waste lyes from (KÖNIGSBERGER ZELLSTOFF-FABR. & CHEM. WERKE KOHOLYT), (P.), B., 401.
 from fibrous vegetable materials (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 871.
 from resinous wood (HEYERDAL and THUNES MCK. VAERKSTED; WEST VIRGINIA PULP & PAPER Co. and DREWSEN), (P.), B., 739.
 and cellulose products, electrolytic manufacture of (HILL and TAYLOR LABORATORIES; TAYLOR and TAYLOR LABORATORIES), (P.), B., 945.
 recovery of constituents from muds containing heavy metals, alkalis, and (A. G. F. ANILIN-FABR.), (P.), B., 153.
 production of sheets of (TAYLOR, CHANDLER, HILL, and TAYLOR LABORATORIES), (P.), B., 818.
 disintegrated, recovery of lye from (MOSEBACH), (P.), B., 122*.
 distillation of, in presence of hydrogen under pressure and catalysts (FIERZ-DAVID and HANNIG), B., 35.
 comparative distillation of lignin, decresinified wood and, under diminished pressure (FISCHER and TROPSCH), B., 859.
 treatment of (TAYLOR and TAYLOR LABORATORIES), (P.), B., 819.

Cellulose, purification of (SCHWALBE), (P.), B., 153.
 depolymerisation of (HEUSER and HIEMER), A., 502.
 electrolytic apparatus for deposition of (TAYLOR and TAYLOR LABORATORIES; TAYLOR, CHANDLER, and TAYLOR LABORATORIES), (P.), B., 835.
 and its nitrate, infra-red absorption spectra of (HERZOG and LASKI), A., 677.
 effect of heat on (BAIN and CHUTE), B., 660.
 thermal decomposition of, under hydrogenation conditions (BOWEN, SHATWELL, and NASH), B., 35; (BOWEN and NASH), B., 474.
 swelling of (HERZOG), A., 793.
 determination of degree of swelling of (BERNARDY), B., 399.
 swelling and mercerisation of (KATZ), A., 793.
 natural, swelling of artificial silk and, in caustic soda (WELTZIEN, GERHARDT, and ZUM TOBEL), B., 737.
 dispersion of, in alkali and alkaline-earth salts (v. WEIMARN and AOKI; v. WEIMARN and KATAOKA; v. WEIMARN and OTSUKA; v. WEIMARN; v. WEIMARN and HORI), A., 576.
 adsorption of alkalis by (LIEPATOV), A., 573, 673.
 absorption of caustic soda by (NUMA), B., 9.
 colloidal properties of (HERZOG), A., 902.
 production of colloidal solutions of (v. WEIMARN), A., 1203.
 chemical activity of (OEMAN), B., 313.
 acetylation of (SOC. CHIM. USINES DU RHÔNE), (P.), B., 483*.
 bleaching of. See under Bleaching.
 decomposition of, under pressure (WATERMAN and PERQUIN), B., 974.
 degradation of (IRVINE and ROBERTSON), A., 823.
 treatment of, prior to esterification (SOC. CHIM. USINES DU RHÔNE), (P.), B., 49*.
 nitration of (CARRIÈRE), A., 503; (JUER and TUBIZE ARTIFICIAL SILK CO.), (P.), B., 110; (MORIN), B., 722; (A. G. F. ANILIN-FABR.), (P.), B., 739.
 action of diazomethane on (NIERENSTEIN), A., 154.
 action of concentrated hydrochloric acid on (ATSUKI), B., 8.
 action of concentrated sulphuric acid on (ATSUKI and MINAKI), B., 266.
 effect of chemicals on paper-making properties of (SIEBER), B., 46.
 production of sugar from (KRANTZ and DE MOLTKE-HUITFELDT), (P.), B., 337.
 fermentation of (SPEAKMAN), B., 687, 992*.
 by bacteria (VILJOEN, FRED, and PETERSON), A., 325.
 influence of available nitrogen on, in soil (ANDERSON), B., 457.
 natural, enzymic cleavage of (KARRER, SCHUBERT, and WEHRLI), B., 44; (KARRER and SCHUBERT), B., 945.
 action of *Bacillus mesentericus* and *subtilis* on (THAYSEN and BUNKER), B., 817.
 decomposition of, by fungi (HEUKELEKIAN and WAKSMAN), B., 101.
 by micro-organisms in soils (WAKSMAN and SKINNER), B., 959.
 in soils (VINOGRADSKI), B., 975.
 utilisation of, in intestines after administration of lichenase (MESSERLE), A., 861.
 Cellulose, alkali, formation of, in aqueous-alcoholic solutions (KATZ), A., 468.
 preparation of (KITA, TOMIYAMA, and ICHIKAWA), B., 481; (HAWLIK and SINDL), (P.), B., 627.
 manufacture of (VAN WEYENBERGH and COURTAULDS), (P.), B., 153*.
 action of oxygen on (WELTZIEN and ZUM TOBEL), A., 824; B., 911.
 esterification of (KITA, MAZUME, NAKASHIMA, and SAKURADA), A., 1026.
 alkali-soluble (LIESER), B., 579.
 bamboo and cotton, comparison of (KITA and AZAMI), B., 8.
 cotton, action of ammonia on (BERNARDY), B., 151.
 swelling of, in sodium and potassium hydroxides (FAUST), B., 1007.
 Guignet, from wood cellulose and wood (SCHWALBE and LANGE), B., 579.
 incrustated, decomposition of, in soils (BARTHEL and BENGTSSON), B., 640.
 determination of, in soils (BENGTSSON), B., 640.
 pulverulent (DE NEYMAN), B., 435.
 soda-, treatment of black liquor from manufacture of (BRADLEY and McKEEFFE), (P.), B., 153.

Cellulose, soda-, production of organic acids from waste liquors from (DERIVEAU, DE FERSEN, FIESCHI, LANCESSEUR, PÔTEL, and WATEL), (P.), B., 49.
 soda- and sulphate-, change of alkalinity of liquor during cooking of (KULLGREN), B., 187.
 sulphate-, alkali loss in manufacture of (SIEBER), B., 187.
 regeneration of black liquor from manufacture of (WHITE, ALEXANDER, and GOODELL), (P.), B., 580.
 absorption of sodium hydroxide from its solutions and from black liquor by (KULLGREN), B., 435.
 tall oil from manufacture of (DITTMER), B., 414.
 sulphite-, chemistry of digestion process in manufacture of (HÄGGLUND), B., 312.
 chemical changes in boiling of (ROUTALA and SEVÓN), B., 626.
 utilisation of condensate from boilers for manufacture of (KARLBERG), (P.), B., 316.
 preparation of concentrated extracts of, containing magnesium compounds (BAKER), (P.), B., 799.
 fluorescence of (LEUPOLD), B., 660; (MEUNIER and JAMET), B., 798.
 swelling of, in sodium and potassium hydroxides (FAUST), B., 1007.
 bleaching of (RYS, EICHMANN & Co.), B., 871.
 effect of time of heating up on constitution of pulp of (ROUTALA and SEVÓN), B., 704.
 freeness of pulp of (DAVIS), B., 660.
 digestion of pulp of (SIVOLA), (P.), B., 783.
 wood-boiling diagram for liquors of (BERNDT), B., 871.
 carbonisation of waste lyes from manufacture of, with mordant salt solutions (SCHWALBE), B., 356.
 chlorination of waste lye from manufacture of (SCHMIDT), (P.), B., 122*.
 utilisation of waste lye from manufacture of (SCHWALBE), (P.), B., 49* ; (RINMAN), (P.), B., 153; (HILPERT), B., 356; (THOMSEN and CROWN WILLAMETTE PAPER CO.), (P.), B., 534.
 non-deliquescent material from waste liquor of (A. G. F. ANILIN-FABR.), (P.), B., 188, 534*.
 preparation of alcohol from waste liquors of (SANDBERG and NILSSON), (P.), B., 894.
 production of sulphur, sulphur compounds, and hydrocarbons from waste lye from manufacture of (A. G. F. ZELLSTOFF- & PAPIER-FABR. and STEINSCHNEIDER), (P.), B., 580.
 tanning materials from waste lye of (BREEDIS and ROHM & HAAS Co.), (P.), B., 249; (BLACKADDER and ROBESON PROCESS Co.), (P.), B., 291; (HÖNIC and FUCHS), (P.), B., 456.
 wood, particle size of (KRÜGER), B., 45.
 determination of lignin in (MÜLLER and HERRMANN), B., 435.
 Cellulose boilers, regeneration of waste heat and gases from (ZELLSTOFF-FABR. WALDHOF, SCHNEIDER, and HANGLEITER), (P.), B., 268, 356*.
 digesters, utilisation of gases from (METALLBANK & METALLURGISCHE Ges.), (P.), B., 401.
 utilisation of heat accumulators in connexion with (RUTHS, INGERÖ, SCHRENK, and AKTIEBOLAGET VAPORACKUMULATOR), (P.), B., 269.
 fabrics, production of linen-like effect on (CLAY LTD., SCOTT, and THOMPSON), (P.), B., 663.
 fibres, pure, preparation of, from impure material (SILBERMANN), (P.), B., 913.
 refractive power of (FREY), A., 1081; (MÖHRING), A., 1082.
 swelling and mercerisation of, in nitric acid (KATZ and HESS), B., 737.
 contraction of, on mercerisation (GORDON), B., 627.
 hydration of, for paper-making (DE CEW and PROCESS ENGINEERS), (P.), B., 533.
 impregnation of (CARTER), (P.), B., 975.
 sizing of (DE CEW and PROCESS ENGINEERS), (P.), B., 49.
 determination of strength of (RÜHLEMANN), B., 187.
 industry, metallographic study of corrosion in (LINDT), B., 871.
 indicators for (OEMAN), B., 531.
 materials, manufacture of, for paper, textiles, etc. (BURLIN, LEICESTER, and HOLMAN), (P.), B., 436.
 treatment of (TAYLOR, CHANDLER, and TAYLOR LABORATORIES; TAYLOR and TAYLOR LABORATORIES), (P.), B., 818.

- Cellulose materials, treatment of, for making pulp (FISH), (P.), B., 871.
- fermentation of (LANGWELL), (P.), B., 459.
- protection of, from insects (KENDALL), (P.), B., 314.
- waterproofing of (WOLFFENSTEIN and MARCUSE), (P.), B., 534.
- plastics, coloured, manufacture of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 315, 661*.
- products, flocculent (WOLFF & Co., CZAPEK, and WEINGAND), (P.), B., 10.
- pulp, swelling action of caustic soda on (D'ANS and JÄGER), B., 398.
- treatment of, with sulphites from waste liquors (DE VAINS), (P.), B., 739*.
- solutions, manufacture of (CLASSEN and COMMERCIAL ALCOHOL Co.), (P.), B., 188*.
- production of film-like bands from (WOLFF & Co., CZAPEK, and WEINGAND), (P.), B., 738.
- cuprammonium (NEALE), A., 241.
- diffusion researches on (HERZOG and KRÜGER), A., 903.
- for artificial silk (HÜLKEN), (P.), B., 188.
- substances, dissolved, recuperation of lye from (MOSEBACH), (P.), B., 627*.
- suspensions, displacement of a heavy or cold liquid from, by a light or hot liquid (MOLIN), (P.), B., 315.
- waste lyes, solid non-hygroscopic products from (A. G. F. ANILIN-FABR.), (P.), B., 739.
- Cellulose acetate, manufacture of (LEVY), (P.), B., 10; (SULZER and EASTMAN KODAK Co.), (P.), B., 48; (ZDANOWICH), (P.), B., 152; (WEBB, MALM, and EASTMAN KODAK Co.), (P.), B., 783; (MALLABAR), (P.), 975.
- manufacture of filaments of (ELLIS and SOC. FABR. DE LA SOIE RHODIASETA), (P.), B., 945.
- composition for manufacture of films of (CARROLL and EASTMAN KODAK Co.), (P.), B., 315.
- crystal structure of (OTT), A., 563.
- crystalline, cryoscopy of (HESS and SCHULTZE), A., 715.
- jellies, elasticity of (POOLE), A., 353.
- precipitation of, from reaction mixtures (FARROW and EASTMAN KODAK Co.), (P.), B., 48.
- rendering of, spinnable from reaction mixtures (ZDANOWICH), (P.), B., 1010.
- treating of (FARROW and EASTMAN KODAK Co.), (P.), B., 10.
- re-lustreing treatment of threads and fabrics containing (BRITISH CELANESE, PALMER, and FULTON), (P.), B., 976.
- solvents for (PATHÉ CINÉMA), (P.), B., 533.
- dyeing of (BRITISH DYESTUFFS CORP., PERKIN, and HOLLINS), (P.), B., 124; (BRITISH CELANESE and ELLIS), (P.), B., 914.
- dyeing or printing of (BRITISH CELANESE and ELLIS; BRITISH CELANESE, ELLIS, and GREENHALGH), (P.), B., 124.
- dyeing, printing, or stencilling of (BRITISH CELANESE, ELLIS, and GOLDTHORPE), (P.), B., 50; (BRITISH CELANESE and ELLIS), (P.), B., 87, 741.
- compositions (BROWN, BOGIN, and COMMERCIAL SOLVENTS CORP.), (P.), B., 783.
- plastic (PATHÉ CINÉMA), (P.), B., 661.
- solutions (CARROLL and EASTMAN KODAK Co.), (P.), B., 48.
- threads, manufacture of (FARB. V. BAYER & Co.), (P.), B., 483*.
- acetate and nitrate sols, viscosity of (V. NEUENSTEIN), A., 677.
- compounds, electrodeposition of (SHEPPARD, BEAL, and EASTMAN KODAK Co.; EBERLIN, BEAL, and EASTMAN KODAK Co.), (P.), B., 793; (SHEPPARD, EBERLIN, and EASTMAN KODAK Co.), (P.), B., 794.
- manufacture of threads, filaments, strips, or films from (HEGAN and COURTAULDS), (P.), B., 1010*.
- derivatives, manufacture of (LILIENFELD), (P.), B., 661*, 1009; (OGDEN), (P.), B., 975.
- decolorisation of solutions of (AKT.-GES. F. ANILIN-FABR.), (P.), B., 704.
- increasing the durability of lacquers, threads, etc., from (LE PLAY), (P.), B., 401.
- plastic masses from (BALKE and LEYSIEFFER), (P.), B., 268.
- esters (KITA, SAKURADA, and NAKASHIMA), B., 944.
- manufacture of (DREYFUS), (P.), B., 436.
- time factor and yield value of (SHEPPARD, CARVER, and SWEET), B., 187.
- dissolving and gelatinisation of (PLINATUS), (P.), B., 315.
- Cellulose esters, solvents for (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 248.
- manufacture of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 202.
- plasticisers and solvents for (LILIENFELD), (P.), B., 1010.
- plastic masses from rubber and (GARKE, MEYER, and CLAASEN), (P.), B., 152.
- of higher fatty acids (GAULT and EHLMANN), A., 942; (KITA, MAZUME, SAKURADA, and NAKAJIMA), B., 45, 870.
- naphthenic acid esters (KITA, MAZUME, NAKASHIMA, and SAKURADA), B., 400.
- sulphuric esters (CAILLE), B., 355.
- esters and ethers, manufacture of, in a solvent (GRILLET and Soc. CHIM. USINES DU RHÔNE), (P.), B., 152.
- solution of (PFEIFFER and OW-ESCHINGEN), (P.), B., 739.
- dyeing of (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING; BRITISH ALIZARINE Co. and BARNARD), (P.), B., 628; (MÜLLER and GRASELLI DYESTUFF CORP.), (P.), B., 628*; (DUISBERO, HENTRICH, WEINAND, ZEH, and GRASELLI DYESTUFF CORP.), (P.), B., 741.
- ether-esters (COURTAULDS, GLOVER, and VAN WEYENBERGH), (P.), B., 48.
- ethers, manufacture of (LILIENFELD), (P.), B., 661*.
- manufacture of threads, filaments, strips, or films from (GLOVER and COURTAULDS), (P.), B., 1010*.
- purification of (Soc. CHIM. USINES DU RHÔNE), (P.), B., 739; (ALTWEGO, MAILLARD, and Soc. CHIM. USINES DU RHÔNE), (P.), B., 1010*.
- solvent for (LILIENFELD), (P.), B., 1010.
- films from (WEBB and EASTMAN KODAK Co.), (P.), B., 580.
- hydrated, conservation of films of (DEFAUCAMBERGE and Soc. FRANÇ. DES CRINS ARTIF.), (P.), B., 356*.
- plastic mass from (LILIENFELD), (P.), B., 483*.
- nitrobenzyl ethers, application of, to dyeing of cotton (PEACOCK), B., 270.
- hydrate, conservation of films of (DEFAUCAMBERGE and Soc. FRANÇ. DES CRINS ARTIF.), (P.), B., 356*.
- nitrate, examination of, in polarised light (TISSOT), B., 723.
- reduction of viscosity of (KOCHER, KIMMEL, and EASTMAN KODAK Co.), (P.), B., 122; (SHEPPARD, EBERLIN, and EASTMAN KODAK Co.), (P.), B., 315; (BRANCHEN and EASTMAN KODAK Co.), (P.), B., 315, 661; (WEBB and EASTMAN KODAK Co.), (P.), B., 975; (KIMMEL and EASTMAN KODAK Co.), (P.), B., 1009.
- solvents for (PATHÉ CINÉMA), (P.), B., 533.
- solubility of, in ether-alcohol (BRUNSWIG), A., 1026.
- adsorption by (DUCLAUX), A., 899.
- sols in mixed solvents (HIGHFIELD), B., 188, 579*.
- colloidised, removal of pyridine from (EBERLIN and EASTMAN KODAK Co.), (P.), B., 122.
- acetylation of (BASSETT, BANGAN, and MEIGS, BASSETT, & SLAUGHTER, INC.), (P.), B., 704.
- gelatinisation of, in nitro-compound powders and celluloid (PARODI-DELFINO), (P.), B., 693.
- removal of nitration acid from (PUNGS), (P.), B., 613.
- manufacture of artificial silk from (BINDSCHEDLER, JUER, and TUBIZE ARTIFICIAL SILK Co. OF AMERICA), (P.), B., 661.
- compositions (CARROLL and EASTMAN KODAK Co.), (P.), B., 533; (LITTMANN and COMMERCIAL SOLVENTS CORP.), (P.), B., 704.
- lacquers (LAIN), B., 373.
- membranes. See under Membranes.
- powder, coating grains of (DAVIES), (P.), B., 110.
- threads, reduction of inflammability of (LAVAUD), (P.), B., 483.
- yarns, process to render, incombustible (LAVAUD), (P.), B., 627*.
- nitrites, stability of (DUCLAUX), B., 46.
- nitrites (BLECHTA), B., 806.
- thiourethanes, manufacture of (LILIENFELD), (P.), B., 47, 400, 532.
- xanthate, manufacture of (MORO), (P.), B., 401.
- α -Cellulose fibres, manufacture of (RICHTER, SCHUR, and BROWN Co.), (P.), B., 1010.
- determination of (BUBECK), B., 579.
- Cellobiose, and its chloroacetate (HUDSON), A., 941.

Cement or Cements, constitution of (JÄNECKE), B., 747.
 manufacture of (FUJIYAMA), (P.), B., 15*; (CROLL and ATLAS PORTLAND CEMENT Co.), (P.), B., 56; (RIGBY), (P.), B., 129; (SIMON; LEONARD), (P.), B., 159; (KNIBBS), (P.), B., 241; (LANTZ), (P.), B., 363; (KIRCHNER and CHEM. FABR. GRÜNAU LANDSHOFF & MEYER), (P.), B., 364*; (LOESCHER; Soc. d'Exploit. Proc. IND. CANALOT), (P.), B., 409; (KÜHL and OTTO & SONS), (P.), B., 748; (WEEKS and MERZ & McLENNAN), (P.), B., 825*; (ECKEL), (P.), B., 918.
 and reduction of ores (FERGUSON), (P.), B., 134*.
 in blast furnaces (GEWERKSCHAFT LUTZ III.), (P.), B., 193; (GRÜN), (P.), B., 276.
 out of spent or waste lime (ILLEMANN), (P.), B., 668.
 from town refuse (HEYL), (P.), B., 587, 981.
 containing iron and alumina combinations (MARTIN), (P.), B., 668.
 manufacture of substances resembling (BUDNIKOV), (P.), B., 981.
 simultaneous production of combustible gas and (GEWERKSCHAFT LUTZ III.), (P.), B., 193.
 treatment of (WINKLER), (P.), B., 91*.
 binding material for (SILBERMANN), (P.), B., 55.
 burning of (STEHMANN; LANHOFFER), (P.), B., 489*; (HEYL), (P.), B., 668.
 kilns for (BURLEY), (P.), B., 241; (NASKE; VICKERS and PARKER), (P.), B., 409.
 electrically heated (SIEMENS & HALSKE, GROSS, and STADLHUBER), (P.), B., 331.
 rotary (VOGEL-JORGENSEN), (P.), B., 825; (SCHMID), (P.), B., 918.
 coolers for (FASTING), (P.), B., 520.
 calcining and clinking of, with recovery of by-product heat and by-products (PIKE), (P.), B., 879.
 mortar for (SOMMER), (P.), B., 193.
 fineness of particles of (GUTTMANN), B., 543.
 setting of (MAEDA), B., 587; (ZAMBONI), B., 1015.
 strengthening and waterproofing of (KIRKPATRICK), (P.), 55.
 coloration of (GOODWIN and WHITE), B., 948.
 production of coloured stains in or upon (KOEBIQ), (P.), B., 441.
 mixture for use as cold glaze for (LANCBEIN), (P.), B., 918.
 solid, carburisation of steel by (DAY), B., 881.
 for floors and wall plastering (GREENBAUM), B., 586.
 destruction of, in soil (NEHRING), B., 709.
 clinker, cooling and hydration of, from rotary kilns (KRUPP GRUSONWERK and MITTAO), (P.), B., 409.
 compositions (DUFON and OBANK), (P.), B., 130*; (FINK, McCORMICK, and CABELL), (P.), B., 1015.
 concrete, Portland, waterproofing of (LORD), (P.), B., 1015.
 drain pipe, durability of, in alkali soils (WILLIAMS and FURLONG), B., 441.
 objects having polished and translucent surfaces (Soc. "LAP" and SEAILLES), (P.), B., 441.
 lime-silica index as a measure of quality of (MERRIMAN), B., 543.
 and raw materials therefor, determination of lime in (KÜHL and KLASSE), B., 543.
 determination of soluble silica in (FLORENTIN), B., 668, 1015*.
 Cement or Cements, abrasive (KEAY), (P.), B., 1015.
 high-alumina hydraulic (BATES), B., 632.
 aluminous (AGDE and KLEMM), B., 275; (EISENBECK), B., 408.
 manufacture of (MARTIN), (P.), B., 409, 918*; (VOISIN), (P.), B., 543.
 continuous furnace for preparation of (DUMAS), (P.), B., 948.
 unfused (DÉCOLLAND), (P.), B., 193.
 asbestos, production of mouldable powders from (I. E. & O. E. LANHOFFER and DANNENBERG), (P.), B., 441*.
 blast-furnace (BURCHARTZ), B., 879.
 determination of silica and lime in raw mixture for (STRUMPF), B., 408.
 blast-furnace or slag, grinding of (GRÜN), (P.), B., 193.
 ferruginous and aluminous (MARTIN), B., 586.
 fused, manufacture of (POLYSIUS), (P.), B., 15; (Soc. DES CEMENTS FRANÇ., BUREAU D'ORGANISATION ECONOMIQUE, and BIED), (P.), B., 159; (PATROUILLEAU and Soc. ANON. ALUMINE & DÉRIVÉS), (P.), B., 880.
 heat-insulating (CALDWELL and CELITE Co.), (P.), B., 15.
 freshly-heated, utilisation of (GRÜN and MUTH), B., 324.

Cement or Cements, high-temperature (WILLETTTS and HARTFORD-EMPIRE Co.), (P.), B., 543.
 hydraulic, production of, from copper slag (AGDE and ASS-MANN), B., 408.
 from oil shale and limestone (REKORD CEMENT IND. and TETENS), (P.), B., 918.
 equilibria of lime, silica, and alumina in (GRÜN), B., 323.
 setting of (BAYKOFF), B., 193.
 determination of free limo in (BRADY and McCONNELL), A., 980.
 litharge-glycerol, setting of (NEVILLE), A., 1092.
 magnesia (WERNER), (P.), B., 91; (FARR. v. BAYER & Co.), (P.), B., 276.
 xylolith from sawdust and (GRÜN), B., 90.
 magnesia-zinc (LEGENTIL and GREFFE), (P.), B., 193.
 magnesium oxychloride (GRANITITE MANUF. Co. and THOMPSON), (P.), B., 14.
 constitution of (MAEDA and YAMANE), B., 587.
 railroad tie made of (JAEGER), (P.), B., 363.
 Portland, manufacture of (VERSHOFEN), (P.), B., 241.
 from molten slag (POLYSIUS), (P.), B., 363.
 fifty years of (MEADE), B., 825.
 manufacture of sulphuric acid and (GOETZMANN), (P.), B., 276.
 grain size of, and its influence on rate of hydration (HAUVENSCHILD), B., 879.
 reducing conditions and colour changes in burning of (KÜHL and ADAM), B., 879.
 effect of heat on strength of mixtures of calcined kieselguhr and (McDOWELL and KRANER), B., 128.
 apparatus for calcining and clinkering mixtures for (PIKE), (P.), B., 949.
 action of magnesium and sodium sulphates on (SHELTON), B., 825.
 waterproof (MILLER), (P.), B., 193.
 determination of uncombined lime in (LERCH and BOGUE), A., 709.
 refractory (KESTNER), (P.), B., 277*.
 hydraulic (ARNOULD), B., 363.
 zirconium ore (LE COULTRE and Soc. d'ÉTUDE DES AGGLOMÉRÉS), (P.), B., 91*.
 Sorel, magnesia from crystalline magnesites for production of (AUSTRAL-AMER. MAGNESITE Co.), (P.), B., 364.
 Cementite, spheroidising of (STOUGHTON and BILLINGER), B., 826.
 determination of heat of precipitation of, from α - and β -martensites (KAWAKAMI), B., 325.
 Cenospheres, formation of (NEWALL and SINNAT), B., 905.
 Centrifugal machines (RAGG), (P.), B., 72; (ENOCK; BEHR), (P.), B., 695; (OLCOTT and HEPPWORTH Co.), (P.), B., 728; (REDLICH), (P.), B., 775.
 safety devices for (BROADBENT & SONS and BROADBENT), (P.), B., 937.
 for treating textiles (WOLFER and OBERMAIER & Co.), (P.), B., 87*.
 separation of alloyed or dissolved liquids (JEGLIŃSKI), (P.), B., 756.
 separators. See under Separators.
Centrophorus lusitanicus (Aka-aizame) liver oil, fatty acids of (TSUJIMOTO), B., 593.
 Ceramic articles, preparation of bodies for (AUSTIN and OHIO BRASS Co.), (P.), B., 241.
 bodies, manufacture of (RIDDLE), (P.), B., 1014.
 physical properties of (SINGER), B., 823.
 heat required to fire (MacGEE), B., 488.
 for ignition-plugs (WATAYA), B., 54.
 white-ware bodies, effects of potters' flints in (PRESSLER and SHEARER), B., 540.
 masses, deformation of, on drying (KBAUSE), B., 823.
 materials (STULL and STULL PROCESS Co.), (P.), B., 543; (AUSTIN and OHIO BRASS Co.), (P.), B., 709.
 determination of electrical resistivity of, at high temperatures (KING), B., 878.
 mixtures, treatment of (SPURRIER), (P.), B., 489*.
 reduction of porosity of (SPURRIER), (P.), B., 55.
 ware, burning of (A. C. SPARK PLUG Co.), (P.), B., 489, 747.
 drying of (PÜKALL), B., 878.
 dryer for (STRAIGHT), (P.), B., 362.
 absorption of sulphur dioxide from kiln gases by (JACKSON), B., 540.
 prevention of scum on (SCHURECHT), (P.), B., 586.

- Ceramic ware, glazed, interferometer measurements of thermal dilation of (MERRITT and PETERS), B., 878.
- Ceramics, process and materials for making (BETTS), (P.), B., 667.
- influence of chemistry on (PURDY), B., 824.
- drying of (RHODES and PROCTOR & SCHWARTZ), (P.), B., 667.
- Ceratoase, ultra-violet extraction coefficient of (MARCHLEWSKI and NOVOTNOVA), A., 222.
- Cereal products, chloropicrin as fumigant for (CHAPMAN and JOHNSON), B., 338.
- Cereals, fat content of (CORMACK), A., 1183.
- other than wheat milling and baking of (MAROTTA), B., 992.
- determination of moisture content of (DENHAM, WATTS, and SIMON, LTD.), (P.), B., 766*.
- determination of proteins in (THOMPSON), B., 845.
- determination of water in (TAUSZ and RUMM), B., 338.
- Cerebral cortex, effect of narcotics on the (TSCHERKES and GORODISSKY), A., 431.
- Cerebrone, hydrolysis of (KLENK), A., 749.
- Cerebronyl-N-sphingosine, and its tri-*m*-nitrobenzoyl derivative (KLENK), A., 749.
- Cerebrospinal fluid, relation of constituents of, to those of blood (KUBIE and SHULTZ; PUCHER and BURD), A., 315.
- influence of, on precipitation of sols by electrolytes (ROSENFELD), A., 424.
- active substances from the hypophysis in (TREDELENBERG), A., 1064.
- action of parathyroid extract on calcium of (CAMERON and MOORHOUSE), A., 1180.
- solubility of calcium phosphate in (HOLT and GITTLEMAN), A., 195.
- dependence of chloride level in, on protein content of plasma (FREMONT-SMITH and DAILEY), A., 1168.
- cholesterol in (DEL DIESTRO), A., 636.
- lactic acid in (GLASER), A., 1052.
- sugar in, and its relation to blood-sugar (DIETEL), A., 1052.
- sugar and calcium in (BRUCKE), A., 858.
- uric acid in (BAUMRITTER), A., 636.
- human, iodine in (CAMBELL and SNODGRASS), A., 858.
- detection of blood in (MANHEIMS and BERNHARD), A., 1168.
- detection of increase in globulin content of (ROCKWELL), A., 970.
- determination of globulin in (NADOR), A., 648.
- determination of hydrogen ions in, colorimetrically (McQUARRIE and SNOHL), A., 442.
- determination of proteins in (LING), A., 1055; (ROSENTHAL and ACKMAN), A., 1271.
- determination of salicylic acid in (LOBERG), A., 648.
- determination of urea in (GRAHAM and MACCARTY), A., 1168.
- Cerium, isomorphism of thorium and (SCAGLIARINI), A., 1196.
- Cerium alloys, pyrophoric (KRATKY), (P.), B., 62.
- Cerium sesquioxide, crystal structure of (ZACHARIASEN), A., 1195.
- Cerous chloride, osmotic pressure of aqueous solutions of (CHISTONI), A., 121.
- ammonium sulphates (ZAMBONINI and RESTAINO), A., 696.
- potassium sulphates (ZAMBONINI and RESTAINO), A., 1015.
- thallous sulphate (ZAMBONINI and RESTAINO), A., 1113.
- Ceric salts, oxidation of pyruvic acid by (FROMAGEOT), A., 820.
- chloride, mixed crystals of, with ammonium chloride and ammonium stannic chloride (CAGLIOTTI), A., 588.
- Cerium detection, determination, and separation:—
- detection of (FERNANDES), A., 140.
- determination of, electrometrically (ATHANASIU), A., 929.
- determination of, in special steels (SWOBODA and HORNY), B., 242.
- separation of, from didymium (DEUTS. GASGLÜHLICHT-AVERGES.), (P.), B., 237.
- Cerotic acid, thallous salt (WALTER), A., 712.
- Ceryl alcohol, acetyl derivatives (STERN and ZELLNER), A., 646.
- Cetyl alcohol, solubility of, in liquid sulphur dioxide (SEYER and BALL), A., 119.
- Cetyl ether (SENDERENS), A., 46.
- Chalk, oil-bearing, utilisation of (SCHWARZENAUER), (P.), B., 862.
- at Heide in Holstein (KEPELER and SCHMIDT), B., 306.
- See also Calcium carbonate.
- Chalk-flint stones, cleaning of (NOAKE), (P.), B., 158*.
- Chalkones. See Phenyl styryl ketones.
- Chamazulene (RUZICKA and RUDOLPH), A., 299.
- Chamomile, effect of, on milk (PROCTER), B., 895.
- Chamotte. See Firebricks.
- Charcoal, manufacture of (URBAIN), (P.), B., 1003.
- for decolorising and deodorising (ARTIFICIAL COAL CO. and HAMON), (P.), B., 351.
- photochemical reactions in presence of (SANDONNINI), A., 252.
- filtration constants of varieties of (WATERMAN and DAUVILLIER), B., 967.
- adsorption and electrical properties of various kinds of (OGAWA), A., 239.
- adsorption by (OGAWA; MILLER), A., 898.
- apparatus for (FARBW. FORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 425.
- of gases (SMITH), A., 1001.
- of poisons (DINGEMANSE and LAQUEUR), A., 541.
- from solutions (SCHILOV and PEVSNER), A., 238; (SURUN), A., 1001; (MILLER), A., 1090.
- from viscous media (WEISSENBARGER, BAUMGARTEN, and HENKE), A., 789.
- heat of adsorption of gases by (WHITEHOUSE), B., 145.
- effect of adsorption by, on toxicity (EISLER), A., 864.
- oxidation on (WRIGHT), A., 532; (RIDEAL and WRIGHT), A., 919.
- activated (RUFF, RIMROTT, and ZEUMER), A., 19; (CHAUMAT), B., 521; (GOUTAL and HENNEBUTE), (P.), B., 732; (URBAIN), (P.), B., 732, 779; (MAGTEOAL; DEIGLMAYR. CHEM. FABR. and SCHWAB), (P.), B., 779.
- manufacture of (WALLACH), (P.), B., 85* ; (LEBEAU), (P.), B., 228; (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 479*.
- manufacture and use of (SAUER), (P.), B., 308.
- properties of (HONTIG), B., 180.
- physical properties of (HERBST), A., 572.
- and its adsorptive power (RUFF), B., 115.
- adsorption of gases by (ROWE), A., 345, 673.
- adsorption of organic acids by (SURUN), A., 788.
- treatment of liquids or gases with (N.V. ALGEM. NORIT MAATSCHAPPIJ), (P.), B., 223.
- for gasoline recovery (MÜLLER), B., 940.
- for medicinal purposes (SAUER), (P.), B., 119.
- coconut, adsorption of carbon dioxide by (ROWE), A., 572.
- decolorising, manufacture of (MÜLLER-CLEMM and GES. F. CHEM. PRODUKTION), (P.), B., 309*.
- highly-active, manufacture of (MÜLLER-CLEMM, SCHMIDT, and GES. F. CHEM. PRODUKTION), (P.), B., 623*.
- adsorbent, manufacture of (BATEMAN), (P.), B., 308.
- spent, desulphurisation of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 5.
- animal, adsorption by (ROSSI and BASINI), A., 1091.
- blood (EHRENBERG), A., 192.
- bone, decolorising efficiency of (WAYNE), B., 894.
- synthetic, from black-strap syrup (DAVIS), (P.), B., 813.
- Carboraffin and "Norit" activated, decolorisation of beet-sugar juices by (LINSBAUER and FISER), B., 559.
- coconut, adsorption of liquid mixtures by (TRYHORN and WYATT), A., 19, 346.
- decolorising (ESSELEN and UNITED FRUIT CO.), (P.), B., 396.
- activation of (DAVIS), (P.), B., 170.
- for sugar refining (BLOWSKI and BON), B., 294.
- "Norit" and other wood, identification of (TANNER), B., 35.
- prepared, manufacture of (SMITH and VARNEY), (P.), B., 5.
- wood, treatment of, with water under pressure and at high temperatures (TROPSCH), B., 859.
- adsorption of gases by (HENOLEN and GRZENKOVSKI), B., 143; (MAGNUS and CAHN; MAGNUS), A., 1001.
- adsorption of carbon dioxide and its mixtures with hydrogen by (MAGNUS and ROTH; MAGNUS and BRAUER), A., 346.
- adsorption of halogens by (RUFF, RIMROTT, and ZEUMER), A., 19.
- ignition temperature and reactivity of (BUNTE), B., 257.
- oxidation of (NELLENSTEYN), B., 35.
- activated, adsorption of mercury vapour by (ZELINSKI and RAKUZIN), A., 1090.
- adsorption from aqueous solutions by (DUBININ), A., 1090.
- highly active (WÖHLER and RHENANIA VER. CHEM. FABR.), (P.), B., 699.
- See also Carbon.
- Chaulmoogra oil (ANDRÉ), B., 98.
- saponification of (GELARIE and GREENBAUM), B., 802.
- Chaulmoogric acid, structure of (SHIMER and ADAMS), A., 47.
- oxidation of, by permanganate (PERKINS), A., 834.
- derivatives of (VAN DYKE and ADAMS; SACHS and ADAMS; NOLLER and ADAMS), A., 1137.

- Chaulmoogryl cyanide.** See Homochaulmoogronitrile.
- Chaulmoogrylacetic acid** (VAN DYKE and ADAMS), A., 1137.
- Chaulmoogrylamine** (SACKS and ADAMS), A., 1137.
- Chaulmoogryldiethylamine**, and its hydrochloride (SACKS and ADAMS), A., 1137.
- Chaulmoogrylmalonic acid, ethyl ester** (VAN DYKE and ADAMS), A., 1137.
- Cheese**, use of commercial rennet in the manufacture of, from whey (GUITTONNEAU, KEILLING, and BARRET), B., 718.
- with increased vitamin content, manufacture of (MELEMEURO-PEISK PATENT-FINANCIERINGS-SELSKAB, HAMBURGER & Co., and LIEBERS), (P.), B., 460; (LIEBERS and HAMBURGER & Co.), (P.), B., 689*.
- emulsification and pasteurisation of (SWIFT & Co.), (P.), B., 383*.
- chemistry of the ripening of (GRIMMER and WAGENFÜHR), B., 26.
- Cheddar**, effect of lactic acid-producing *Streptococci* on the flavour of (HUCKER and MARQUARDT), B., 718.
- durable soft, conversion of hard cheese into (CLAASS), (P.), B., 297.
- measurement of hydrogen-ion concentration of (KNUDSEN), B., 105.
- determination of acidity of, colorimetrically (HOLWERDA), B., 212.
- Cheese fat**, preparation and examination of (BAUMANN), B., 688.
- Chelodone imbricata**, diamino-acids of the shield of (KEIL), A., 1168.
- Chelidamic acid**, and its derivatives, ultra-violet absorption spectra of (RIEGEL and REINHARD), A., 734.
- Chemicals**, inorganic fusible, preparation of, in small lumps (CHEM. FABR. KUNHEIM & Co.), (P.), B., 439.
- Chemical constants and critical magnitudes of liquids** (HOLZ-SCHMIDT), A., 233.
- constitution. See under Constitution.
- reactions. See under Reactions.
- Chemiluminescence** (DIHAR), A., 992.
- Chemotherapy**, mechanism of (MANDEL and STEUDEL), A., 1273.
- Chenodehydroxycholeic acid**, oxidation of (WINDAUS and VAN SCHOOR), A., 169.
- Chenodeoxycholeic acid** (WINDAUS and VAN SCHOOR), A., 169.
- Chenopodium oil**, determination of ascaridole in (PAGET), B., 462.
- Chickens**, nutrition of (HART, STEENBOCK, LEFKOVSKY, and HALPIN), A., 437.
- embryo, constituents of (VLADIMIROV and SCHMIDT; FISKE and BOYDEN), A., 1268.
- variation in constituents of, with age (MURRAY), A., 1052.
- glutathione in (MURRAY), A., 751.
- Children**, alkali in blood-serum of (CSAPÓ), A., 425.
- effect of orange juice in diet of (CHANEY and BLUNT), A., 437.
- trypsin in, in health and disease (LURÁCS), A., 636.
- China wood oil.** See Tung oil.
- Chitin** (KNECHT and HIBBERT), B., 1008.
- double refraction of (MÖHRING), A., 1082.
- production of colloidal solutions of (v. WEIMARN), A., 1203.
- Chitins**, X-ray structure of (GONELL), A., 563.
- Chloral**, condensation of, with *p*-nitrophenol (CHATTAWAY), A., 1242.
- alkyloxides, carbamic esters of (KALLE & Co. and SPRÖNGERTS), (P.), B., 901.
- hydrate, apparent electromotive force of (ARENSON, ROLLER, and BROWN), A., 687.
- action of heat on (MOUNFIELD and WOOD), A., 385.
- velocity of reaction of permanganate with (BUZAGH), A., 1010.
- Chloramine-T**, use of, in volumetric analysis (VAN ECK), A., 1115.
- Chlorates.** See under Chlorine.
- Chlorella**, photosynthesis by (ADAMS), A., 308.
- assimilation of carbon dioxide by (WARBURG), A., 325.
- availability of iron for species of (HOPKINS and WANN), A., 204.
- Chlorides.** See under Chlorine.
- Chlorination**, new method of (SILBERRAD), A., 158.
- with sulphuryl chloride (SILBERRAD, and BOAKE, ROBERTS & Co.), (P.), B., 1029.
- Chlorine**, atomic weight and isotopes of (HARKINS and STONE), A., 553.
- preparation of (PARTRIDGE and SCARRITT), (P.), B., 127.
- absorption spectrum and heat of dissociation of (KUHN), A., 1192.
- arc spectrum of (TURNER), A., 550.
- band spectra of (NAKAMURA), A., 882.
- line spectra of isotopes of (JENKINS), A., 771.
- Chlorine**, series spectrum of (HOFFIELD), A., 1186.
- gaseous and liquid, scattering of light in (MARTIN and COLE), A., 559.
- photochemical reaction of hydrogen with (MARSHALL), A., 34, 484, 808; (CATHALA), A., 484; (PADOA and VITA), A., 808.
- action of hydrogen on, exposed to light and α -rays (PORTER, BARDWELL, and LIND), A., 1111.
- oxidation potentials and equilibria of, with iodine, hydrochloric acid, and water (FORBES, GLASS, and FUOSS), A., 128.
- dissociation and specific heat of (WOHL and KADOW), A., 246.
- atoms, energy levels of (ALLISON), A., 214.
- liquefaction of (JEWELL and CHLORINE PRODUCTS Co.), (P.), B., 584.
- liquefied, transportation of (WELLS, MABEY, and ROWLAND), B., 486.
- chemical constants of (JELLINEK and ULOTH), A., 682.
- adsorption of, by wood charcoal (HENGLEIN and GRZENKOVSKI), B., 143.
- action of, on aniline (BROWN and CUMMING), B., 909.
- reaction of ethylene with (NORRISH and JONES), A., 226; (STEWART and FOWLER), A., 690.
- economics of (FRITCHARD), B., 438*.
- use of, in organic chemical industry (CONROY), B., 432.
- removal of traces of, from air (ROSENSTEIN), (P.), B., 539.
- in the petroleum industry (BURGESS), B., 428*.
- use of, in sewage and waste disposal (BAKER), B., 389.
- use of, in sugar refining (OCHI), B., 559.
- use of, in recovery of tin and its salts from tin-plate scrap (MANTELL), B., 410.
- as sterilising agent for water (SCHWARZBACH), B., 469.
- and its compounds, sterilisation of water by (HAROLD), B., 78.
- in blood (SINDLER), A., 856.
- effect of X-rays on excretion of (ENGELHARD and SIELMANN), A., 1053.
- treatment with, in respiratory diseases (GILCHRIST), A., 637.
- Chlorine monoxide**, thermal decomposition of (ZAWIDZKI), A., 362.
- dioxide**, vapour pressure of (KING and PARTINGTON), A., 569.
- Hydrochloric acid**, photochemical synthesis of (KORNFELD and MÜLLER), A., 252; (CATHALA), A., 252, 484, 585; (MARSHALL), A., 484; (COHEN and HEYMER), A., 1112.
- manufacture of (SALZWERK, HEILBRONN, LICHTENBERGER, and FLOR), (P.), B., 155; (VEREIN FÜR CHEM. & METALL. PRODUKTION; TYRER), (P.), B., 979.
- from chlorine and steam (NEUMANN and DOMKE), B., 358; (NEUMANN, STEUER, and DOMKE), (P.), B., 665.
- from magnesium chloride (FRANK), (P.), B., 320.
- commercial (SALT and PITTSBURGH PLATE GLASS Co.), (P.), B., 538.
- pure (VEREIN FÜR CHEM. & METALL. PRODUKTION), (P.), B., 630.
- free from arsenic (SCHMIDT and GES. F. CHEM. PRODUKTION), (P.), B., 238*.
- infra-red band spectra of (KEMBLE and BOUROIIN), A., 658.
- optical anisotropy of (RAMANATHAN and SRINIVASAN), A., 336.
- electrical conductivity of, in water, and in acetone-water mixtures (BROWNSON and CRAY), A., 246.
- electrolysis of aqueous solutions of (HOLLARD), A., 366.
- ionisation of (BARTON), A., 1189.
- potential of solutions of, containing sucrose (SCATCHARD), A., 911.
- oxidation potentials and equilibria of, with chlorine, iodine, and water (FORBES, GLASS, and FUOSS), A., 128.
- mobility of ions in, and its mixtures with air (LOEB), A., 219.
- activity coefficient of, in strong electrolytes (HARNED), A., 354.
- in non-aqueous solutions (LUCASSE), A., 796.
- in glycerol-water mixtures (LUCASSE), A., 474, 687.
- dielectric constant of (PAULING), A., 225, 661.
- dissociation and specific heat of (WOHL and KADOW), A., 246.
- specific heat and entropy of (HICKS and MITCHELL), A., 784.
- and its alkali salts, density, equivalent conductivity, and relative viscosity of (RUBY and KAWAI), A., 686.
- melting-point curves of binary mixtures of ether and acetone with (HIRAI), A., 908.
- distillation of (OMAN), A., 235; (RAMBERG), A., 236.
- stability of constant-boiling solutions of (SHAW), A., 1220.
- evaporation of concentrated solutions of (BIAŁKOWSKI), A., 932.

Chlorine:—

- Hydrochloric acid**, partial pressure of aqueous solutions of (KLEMENC and NAGEL), A., 1000.
distribution of, between water and benzene (VOSNESSENSKI and TSCHEUTOV), A., 788.
adsorption of (EGLESON and GEN. CHEM. Co.), (P.), B., 88.
in acetic acid and sulphuric acid (ČUPR), A., 571.
by sulphuric acid (ČUPR), A., 17.
energy needed to split molecules of, into atomic ions (KEMBLE), A., 224.
recovery of, from ferrous chloride liquor (ENSOLL), (P.), B., 583; (KRAUSS), (P.), B., 605.
action of methyl ether with (SHIDEI), A., 24.
gaseous, equilibrium of the action of, on potassium bromide (JELLNER and ITELSOHN), A., 909.
additive compounds of metallic sulphates with (EPHRAIM), A., 36, 587.
comparison of methods of standardisation of (KOLTHOFF), A., 813.
determination of, by the calc-spar method (RIVETT), A., 590.
determination of, with potassium iodate (KOLTHOFF), A., 139.
determination of, in gastric contents (HALLANDER), A., 1068.
- Chlorides**, anhydrous, manufacture of (GOHIN), (P.), B., 538.
electrolytic decomposition of (SCHLUMBERGER and KOHOLYT A.-G.), (P.), B., 916*.
catalysis by copper sulphate of the decomposition of, by sulphuric acid (BOBNAR and ROTI), A., 1011.
determination of, electrochemically (ZANKO), A., 910.
determination of, iodometrically, alone and in presence of other halides and cyanides (BERG), A., 1017.
determination of, potentiometrically (LANGE and SCHWARTZ), A., 701.
- Chlorates**, electrolytic cell for manufacture of (VER. F. CHEM. & MET. PRODUCTION), (P.), B., 198.
apparatus for production of (WILDERMAN), (P.), B., 157*.
detection and determination of perchlorates in (HAIN), B., 404.
determination of, with copper powder (KÜRSCHNER and SCHARRE), A., 490.
- Perchloric acid**, determination of (LOEBICH), A., 489; (ARNDT and NACHTWEY), A., 489, 701; (FOCHTER), A., 813.
determination of small quantities of (KÖNIG), A., 1017.
- Perchlorates**, densities of aqueous solutions of (MAZZUCCHELLI and PRÖ), A., 675.
detection and determination of, in Chile saltpetre and in chlorates (HAIN), B., 404.
determination of (DOBROSERDOV), A., 928.
determination of, with copper powder (KÜRSCHNER and SCHARRE), A., 490.
determination of, in Chile saltpetre (HOFMANN, HARTMANN, and HOFMANN), B., 292; (LEIMBACH), B., 404.
determination of chlorine in (DOBROSERDOV and ERDMANN), A., 927.
- Hypochlorous acid**, and its alkali salts (v. DEINES), A., 138; (MÜLLER), A., 258.
apparatus for production of (WILDERMAN), (P.), B., 157*.
apparatus for manufacture of solutions of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 322.
influence of soluble silicates on solutions of (CARTER), B., 357.
- Chlorine detection and determination:—**
free, detection of, in water by the *o*-tolidine and starch iodide tests (BUSWELL and BORUFF), B., 174.
detection of, in chlorinated sewage tank effluents (TIEDEMAN), B., 613.
detection and determination of, in drinking water (KOLTHOFF), B., 517.
determination of, in mixtures with air (YOE; PORTER), A., 927.
determination of, in benzaldehyde (WAGNER), B., 75.
determination of, in blood and tissues (REHBERG), A., 984.
determination of, in perchlorates (DOBROSERDOV and ERDMANN), A., 927.
- Chlorine ions**, determination of, in water (VAN URK), B., 174.
- Chlorine tank**, leakage of a, and its prevention (BÖRNER), B., 235.
- Chlorine water**, preparation of (RUFF and JOCKWIG), A., 926.
for sterilisation of sewage (I. G. FARBENIND.), (P.), B., 934.
- Chloris petraea**, hydrocyanic acid in (ROSENTHALER), A., 210.
- Chlorite** in Transvaal marundite (ORCEL), A., 42.
- Chlorites** (WINCHELL), A., 494.
classification of (ORCEL), A., 933.
- Chlorites**, thermal analysis of (ORCEL), A., 1119.
- Chloroaluminates**. See under Aluminium.

Chloroanrates and Chloroauric acid. See under Gold.

- Chlorocodon Whiteii**, constituents and pharmacology of (DILLING), A., 440.
- Chloroeruoirin** (FOX), A., 313.
- Chloroeruoorchromogen** (FOX), A., 313.
- Chloroeruoorchromatin** (FOX), A., 313.
- Chloroeruoorchæmin** (FOX), A., 313.
- Chloroeruoorphyrin** (FOX), A., 313.
- Chloroform**, latent heat of fusion of (MITSUKURI and AOKI), A., 668.
vapour pressure of mixtures of acetone and (WEISSENBARGER and SCHUSTER), A., 787.
distillation of mixtures of toluene and (LESLIE and GENIESSE), B., 615.
explosion of mixtures of, with oxygen and nitrous oxide (JONISSEN and ONKIEHONO), A., 1205.
suitability of, for alkaloidal assays (WATKINS and PALKIN), B., 848.
poisoning. See under Poisoning.
determination of alcohol and ethyl chloride in (NEWCOMB), B., 172.
- Chlorohydrins**, ethers derived from trioxymethylene and (BLANCHARD), A., 1023.
- Chloroimidodisulphonic acid**, alkali salts, production of (RASCHIG), (P.), B., 876.
- Chlorophyll**, formula of, and its relation to pyrrole derivatives (GODNEV), A., 183.
absorption spectra of (LJUBIMENKO), A., 439.
effect of irradiation on (AMAR), A., 872.
photosynthesis by (WURMSER), A., 486.
photochemical effect of, and its action in assimilation (NOACE), A., 808.
- Chlorophyll-*a*** and **-*b***, structure of (ADAMS), A., 308.
- Chloropierin**, antiseptic power of (VIOLE), B., 222.
as fumigant for cereal products (CHAPMAN and JOHNSON), B., 338.
- Chlororuthenates**. See under Ruthenium.
- Chlorosulphonic acid**, action of, on acetyl chloride (KRAČJINOVIĆ), A., 1125.
on phenols (POLLAK, GEBAUER-FÜLNEGG, and RIESZ), A., 514;
(POLLAK, GEBAUER-FÜLNEGG, and BLUMENSTOCK), A., 532;
(POLLAK and GEBAUER-FÜLNEGG), A., 1244.
methyl ester, as sulphonating agent (FRÈREJACQUE), A., 1251.
- Chocolate**, preparation of (BARNITT), (P.), B., 106.
detection of coconut oil in (RUFFY), B., 552.
determination of coconut oil in (LUKAS), B., 140.
determination of fat in (RUFFY), B., 765.
determination of shell in (GROSSFELD), B., 688.
determination of sucrose in (JØRGENSEN), B., 212.
- Cholanic acid**, synthesis of ψ -cholestan from (WIELAND and JACOBI), A., 1139.
- Cholanic acid**, 7-hydroxy-, and its esters (WIELAND, SCHLICHTING, and WIEDERSHEIM), A., 400.
7:12-*di*- and 3:7:12-*tri*-hydroxy- and their derivatives (BORSCHKE and FRANK), A., 1140.
- alloCholanic acid**, 3:13-*di*hydroxy-, and its derivatives (WINDAUS), A., 723.
- ψ -Cholestan**, synthesis of, from cholanic acid (WIELAND and JACOBI), A., 1139.
- Cholesterol**, and its derivatives (MONTIGNE), A., 1136.
synthesis of, in the organism (RANDLES and KNUDSON), A., 429.
by the spleen (ABELOUS and SOULA), A., 204.
absorption spectrum of (SCHULTZ and ZIEGLER), A., 1065.
photoactivation of, by Röntgen rays (HAMANO), A., 546.
by ultra-violet light (HAMANO), A., 98.
polymerisation of (BILLS and McDONALD), A., 981.
distillation of, under reduced pressure (FISCHER and TREIBS), A., 399.
flocculation of suspensions of (RONA and DEUTSCH), A., 792.
solubility of, in ethyl and methyl alcohols (ERLANDSEN), A., 898.
precipitation of, from dispersions (STERN), A., 576.
effect of, on reproduction (SUZUKI and HASHIMOTO), A., 863.
activated, action of *n*-butyl nitrite on (BILLS), A., 437.
irradiated, antirachitic value of (HESS, WEINSTOCK, and SHERMAN), A., 207, 546, 1182.
antirachitic derivative of (BILLS), A., 645.
and its esters, proportions of, in aortæ (SCHÖNHIMER), A., 1269.
in bile and serum (STERN and SUCHANTKE), A., 1054.

- Cholesterol in blood-serum, and its determination (HANDOVSKY, LOHMANN, and BOOSE), A., 1057.
distribution of, in pregnancy (BAUMANN and HOLLY), A., 429.
in serum-globulin (TROENSEGAARD and KOUHAHL), A., 634.
in the eye (DEHORNE), A., 316.
in organs in vitamin-C deficiency (MOURIQUAND and LEULIER), A., 1181.
in tissues in cyanide poisoning and vitamin deficiency (MESSERLE), A., 98.
naphthylurethane from (BICKEL and FRENCH), A., 517.
esters of, with unsaturated acids (SOC. CHEM. IND. IN BASLE), (P.), B., 141.

and iodo-, derivatives of, with mercuric acetate (MERZ), A., 723.
detection and determination of (STEINLE and KAULENBERG), A., 633.
determination of (SURÁNYI and KORÉNYI), A., 100.
apparatus for determination of (LEIBOFF), A., 1184.
determination of, gravimetrically (GIRARDIN and SPACH), A., 1283.
- Choline, action of, and its ester, on blood pressure (GLAUBACH and PICK), A., 200.
action of, on motor function of the alimentary canal (ABDERHALDEN and PAFFRATH; ABDERHALDEN, PAFFRATH, and SICKEL), A., 97.
in sweat (KLAUS), A., 195.
from yeast (VICKERY), A., 978.
salts of (GRÜN and LIMPÄCHER), A., 826, 827.
esters of (ABDERHALDEN, PAFFRATH, and SICKEL), A., 97.
hydrolysis of, and its analogues (RENSHAW and BACON), A., 805.
compounds, physiological activity of (RENSHAW and WARE), A., 155.
having laxative properties (CALLSEN and WINTHROP CHEMICAL CO.), (P.), B., 608.
- Chondrites, classification of (LACROIX), A., 816.
Chondropterygians, utilisation of skins of (EHRENREICH and BENDIXEN), (P.), B., 705*.
- Chromates. See under Chromium.
- Chrome alum, production of, from solutions of ferrochromium (STARCK, KOMMANDITGES., KLAUS, and BASLER), (P.), B., 876.
Chrome iron ore. See Chromite.
Chrome yellow (WAGNER and KEIDEL), B., 500.
Chromic acid. See under Chromium.
- Chromite, preparation of chromates from (LUKIANOV), B., 87.
determination of chromium in (DITTLER), B., 411; (FRANKE and DWORZAK), B., 589.
- Chromium, manufacture of (STRONG, PARSONS, PEACOCK, and METAL RESEARCH CORP.), (P.), B., 548; (METAL RESEARCH CORP.), (P.), B., 792*.
production and treatment of (WESTINGHOUSE LAMP CO.), (P.), B., 984.
extraction of, from leather (MASNER and BERESTOVOJ), B., 958.
recovery of, from leather waste (ELLENBERGER and SCHRECKER), (P.), B., 683.
and its alloys, production of, from ores (HEULAND), (P.), B., 673.
removal of, from amalgams (RUSSELL, EVANS, and ROWELL), A., 911.
K-doublets in spectrum of (SELJAKOV and KRASNIKOV), A., 446.
absorption spectrum of (ZUMSTEIN), A., 650.
spark spectrum of (LANG), A., 874.
ultra-violet spark spectrum of (KIESS and LAPORTE), A., 650.
electrochemistry of (GRUBE, HEIDINGER, and SCHLECHT), A., 362; (GRUBE and SCHLECHT; LIEBREICH and WIEDERHOLT), A., 687.
electrodeposition of (LIEBREICH), (P.), B., 96; (LE BRIS), (P.), B., 163, 673; (WOLFF), (P.), B., 246; (FINK and CHEMICAL TREATMENT CO.), (P.), B., 548; (LONG, MACNAUGHTAN, and GARDAM; APPEL), (P.), B., 985; (SUZUKI and GENERAL ELECTRIC CO.), (P.), B., 1019.
plating with (SCHWARTZ and CHROMIUM PRODUCTS CORP.; KYROPOULOS; HOSDOWICH and CHROMIUM PRODUCTS CORP.), (P.), B., 711.
allotropy of (BRADLEY and OLLARD), A., 112.
mode of combination of, with hide protein (THOMAS and KELLY), B., 599.
diffusion of, into iron (GRUBE and y. FLEISCHBEIN), B., 749.
cementation of ferrous alloys by (LAISSUS), B., 443.
effect of nitrogen on, and its alloys with iron (ADCOCK), B., 829.
- Chromium, complex fluoro-salts of (WEINLAND, LANG, and FIKENTSCHER), A., 316.
Chromium alloys, welding of (NORWOOD), B., 950.
with carbon and iron (MEIERLING and DENECKE), A., 357; (v. VEOESACK), A., 799.
with cobalt and tungsten, hard (SIEMENS & HALSKE and FETKENHEUER), (P.), B., 197.
with iron (WEIDENTHAL and HERRON CO.; WARGÖNS-ARTIEB.), (P.), B., 753; (BAIN), B., 828; (SAKLATWALLA), (P.), B., 884.
with iron and silicon (DENECKE), A., 909.
with nickel (COCHRANE and U.S. INDUSTRIAL ALCOHOL CO.), (P.), B., 63.
paramagnetic, dilatometric anomaly of (CHEVENARD), B., 546.
- Chromium bases (*chromiumammynes*) (KING), A., 812.
Aquo-pentamminechromic salts (KING), A., 812.
Hydroxopentamminechromic salts (KING), A., 812.
- Chromium compounds, manufacture of, free from iron (CHEM. FABR. KUNHEIM & CO. and PULS), (P.), B., 127.
reduction of, by hydrogen (IPATIEV and MOUROMTSEV), A., 1114.
dyes containing (SOC. CHEM. IND. IN BASLE; BADISCHE ANILIN- & SODA-FABR.), (P.), B., 702.
of azo-dyes (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 233.
fixation of, by hide substance (GUSTAVSON and WIDEN), B., 556.
complex, tanning action of (STIASNY and SZEGÖ), B., 376; (AGENO-VALLA and ASTENGO), B., 716.
- Chromium salts, action of, on permittit (GUSTAVSON), B., 503.
reactions of, with sodium acetate, oxalate, and tartrate (BRITTON), A., 586.
- Chromium carbonyl, preparation of (JOB and CASSAI), A., 1017.
chlorides, molecular volumes of hexahydrates of (BIRK and BILTZ), A., 110.
trihydride (WEICHSELFELDER and THIEDE), A., 373.
hydroxide, colloidal, osmotic pressure and membrane potential of (RINDE), A., 347.
adsorption of sulphides by (HOLMES and DIETRICH), A., 468.
- sesquioxide (*chromic oxide*), luminescence of (WÖHLER), A., 335.
surface luminescence of (WÖHLER and RABINOVITSCH), A., 335.
electrolysis of solutions of (MÜLLER), A., 913.
effect of heat on (BLANC), A., 1205.
oxidation of (BLANC and CHAUDRON), A., 372.
anodic oxidation of (SAXON), A., 583.
adsorption of ammonia by (NIKITIN), A., 1002.
reduction of, by carbon (HEUSLER), A., 909.
hydrated, action of, on dyes (BURNS and WOOD), B., 625.
preparation of compounds of, for tanning (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 762.
- magnetic oxide of (BLANC), A., 782.
oxides (SIMON and SCHMIDT), A., 697.
sulphate, manufacture of solutions of, from ferrochrome (STARCK, KOMMANDITGES., KLAUS, and BASLER), (P.), B., 192.
- Chromic salts, basic, manufacture of (RÜSSNER, RUNNE, and GRASSELLI DYESTUFF CORP.), (P.), B., 788.
catalysis by silver ions of the oxidation of, by persulphuric acid (YOST), A., 251.
- Chromic chloride hexahydrates (PARTINGTON and TWEEDY), A., 343.
hydroxide sols, viscosity and hydrogen-ion concentration of (YOE and FREYER), A., 1203.
nitrate hydrates (PARTINGTON and TWEEDY), A., 697.
alkali phosphites (ROSENHEIM, FROMMER, GLÄSER, and HÄNDLER), A., 696.
- Chromous salts, reducing action of (TRAUBE and LANGE), A., 257.
reduction of carbonyl compounds by (CONANT and CUTTER), A., 616.
- Chromyl chloride, action of, on terpenes (SWORD), A., 841.
Chromic acid, determination of, with titanous sulphate (SOMEYA), A., 705, 1116.
- Chromates, preparation of, from chromite (LUKIANOV), B., 87.
manufacture of (I. G. FARBENIND.), (P.), B., 1013.
preparation of mixtures containing dichromates and (BOEHRINGER & SOEHNE), (P.), B., 434.
spectral sensitivity of, with organic substances (EDER), A., 774.

Chromium :—

- Chromates**, photochemistry of (PLOTNIKOV and KARSCHULIN), A., 585, 1014.
 photochemical oxidation of organic compounds by (PLOTNIKOV), A., 253.
 basic, electrometric precipitation of (BRITTON), A., 247.
 production of solutions of, free from iron (STARCK, KOMMANDITGES., KLAUS, and BASLER), (P.), B., 789.
- Dichromates**, preparation of mixtures containing chromates and (BOEHRINGER & SOEHNE), (P.), B., 434.
- Chromium organic compounds** (HEIN and SPÄTE), A., 628.
 ultrafiltration of colloidal solutions of, in ethylene bromide (HEIN and SPÄTE), A., 903.
 complex, with amino-acids (SARKAR), A., 1235.
 with asparagine and glycine (FLORENCE and COUTURE), A., 715.
- Chromium di-*p*-bromotetraphenylene hydroxide**, penta-*p*-bromotriphenylene bromide, and tetra-*p*-bromophenyl bromide (HEIN and SPÄTE), A., 628.
 guanidine alum (CANNER), A., 55.
 tetraphenyl (HEIN and EISSNER), A., 534.
 sulphate, compounds of, with acetic acid (RECOURA), A., 1237.
- Chromium detection and determination :—**
 detection of (LONGINESCU and PETRESCU), A., 263.
 detection and determination of, in fats (SNODDY), B., 285.
 determination of, volumetrically (REINITZER and CONRATH), A., 492; (MÜLLER and MESSE), A., 1222.
 determination of, in used chrome tanning liquors (KUBELKA and WAGNER), B., 683.
 determination of, in chromite (DITTLER), B., 411; (FRANKE and DWORZAK), B., 589.
- Chromium ores**, decomposition of (I. G. FARBERIND and CASPARI), (P.), B., 952.
- Chromium steel**. See Steel under Iron.
- Chromones**. See Benzopyrones.
- Chromonol**, 2:2-dichlorothio-, action of alkalis on (ARNDT), A., 177.
- Chromophore blue** (GUPTA), (P.), B., 736.
- Chromyl chloride**. See under Chromium.
- Chrysalis oil**, isoacids in hardened (UENO and KUZE), B., 637.
- Chrysoberyl**, crystal structure of (BRAGG and BROWN), A., 227.
- Chrysofluorenyl halides** (WANSCHIEDT), A., 1239.
- Chrysofluorenyl-*aa*-dinaphthfluorene** (WANSCHIEDT), A., 1239.
- Ciba-yellow**, and its derivatives (POSNER and HOFMEISTER), A., 1156.
- Cicer arietinum**, lecithins from peas of (ZLATAROV), A., 210.
- Cinchomeric acid**, degradation of homologues of (MUMM and NEUMANN), A., 958.
- Cinchona alkaloids** (ERBEN, PHILIPPI, and MAULWURF), A., 1159.
 hydrogenation of (HOWARDS & SONS and BLAGDEN), (P.), B., 565.
 trypanocidal action of, *in vitro* (TSAKALOTOS), A., 540.
 salts, manufacture of (ÉTABL. POULENC FRÈRES), (P.), B., 769.
 dissociation and determination of, volumetrically (MORTON), B., 801.
 separation of (MESSNER), B., 384.
- Cinchonic acid**, chloride of, and its hydrochloride (SPÄTH and SPITZER), A., 958.
- Cinchonine-*N*-oxide** (POLONOVSKI), A., 1160.
- Cinchophen**. See 2-Phenylquinoline-4-carboxylic acid.
- Cinnamaldehyde**, equilibria of, with phenols (KREMANN and ZECHNER), A., 396.
 pyrogenic decomposition of (PEYTRAL), A., 519.
 reduction of, in presence of platinum oxide-platinum black (TULEY and ADAMS), A., 165.
- Cinnamic acid**, photochemical action of bromine on (GHOSH and PURKAYESTHA), A., 366.
 photochemistry of derivatives of (STOBBE), A., 287.
 nitration of derivatives of (VAN DER LEE), A., 1245.
 basic uranium salt (LOBANOV), A., 372.
- Cinnamic acid**, amino-, ethyl ester, reactions of, and tribromo-amino-, and its ethyl ester (UNDERWOOD and KOCHMANN), A., 287.
α-amino-*p*-hydroxy-, *α*-acetyl derivative (BERGMANN and STERN), A., 743.
p-bromo-*m*-nitro-, *p*-chloro-*m*-nitro-, and *m*- and *p*-dinitro-, ethyl esters (VAN DER LEE), A., 1245.
α-cyano-*m*-hydroxy- (HOUBEN and PFANKUCH), A., 951.
o-hydroxy-, nitrile and acetyl derivative, and derivatives of the latter (HOUBEN and PFANKUCH), A., 951.
- Cinnamic acids**, isomeric, polymerisation of, by light (STOBBE and LEHFELDT), A., 64.
cis-Cinnamic acids, isomerism of (STOBBE), A., 166; (WEYGAND and MATTHES), A., 1041.
- Cinnamomum massoia**, from Papua, essential oil of bark of, (IMPERIAL INSTITUTE), B., 215.
- Cinnamomum parthenoxylon**, oil from (EATON and TEIK), B., 691.
 from Federated Malay States (IMPERIAL INSTITUTE), B., 215.
- Cinnamonitrile hydrochloride** (HOUBEN and PFANKUCH), A., 951.
- Cinnamoyl peroxide** (BÖESEKEN and GELISSEN), A., 166.
- Cinnamoyl-*α*-benzylmonoxime** (MEISENHEIMER, ZIMMERMANN, and v. KUMMER), A., 406.
- Cinnamoyl-*d*-glutamic acid**, *α*-amino-, acetyl derivative (BERGMANN, STERN, and WITTE), A., 1236.
- Cinnamoyl-*l*-tyrosine**, *α*-amino-, acetyl derivative (BERGMANN, STERN, and WITTE), A., 1236.
- Cinnamyl alcohol**, naphthylurethane from (BICKEL and FRENCH), A., 517.
- alloCinnamyl alcohol**, and its phenylurethane (BOURGUEL and YVON), A., 269.
- Cinnamyl mercaptan** (v. BRAUN and MURJAHN), A., 829.
- alloCinnamylideneacetic acid**, photocatalysis of, with iodine (GHOSH and GUPTA), A., 400.
- 5-Cinnamylidene-2:3-diphenylisothiohydantoin** (HANN and MARKLEY), A., 623.
- 7-Cinnamyl-4'-methoxy-2-styrylisoflavone**, 5-hydroxy- (BAKER and ROBINSON), A., 1253.
- Cinnamyl dithiourethane** (v. BRAUN and MURJAHN), A., 829.
- Circulation of fluids under high pressure** (McHAFFIE), B., 255.
- "Citarin"**, use of, in analysis (VANINO and GUYOT), A., 491.
- Citraconic acid**, ethyl ester, action of ethyl malonate and sodium ethoxide on (INGOLD and SHOFFEE), A., 1039.
- Citral**, catalytic reduction of, with platinum catalyst (ADAMS and GAWEX), A., 500.
- Citric acid**, formation of, by *Aspergillus niger* (BERNHAEUER), A., 978.
 formation of, from gluconic acid by moulds (WEHMER; SCHREYER), A., 147.
 preparation of, by fermentation (SZÜCS), (P.), B., 642.
 and its calcium salt, manufacture of, from lemon juice (MELIS), B., 690, 995*.
 from lime juice (WARNEFORD and HARDY), B., 106.
 crystallisation of, from lemon juice (AJON), B., 214, 963.
 in Grecian musts (GALANOS), B., 603.
 and its ammonium salts, action of, on calcium phosphates (ANDREASEN), B., 991.
 gadolinium salts (SARKAR), A., 1218.
 Denigès' reaction for (WAGENAAR), A., 1226.
 detection of (PETERSON), A., 84.
 determination of, in fruits (MUTTELET), B., 564.
 determination of, in wine (REIOHARD), B., 687.
- Citric acids**, preparation of, by fermentation (FALCK), (P.), B., 853.
- Citromolybdic acid**, and its salts (NYSSSENS), A., 821.
- Citronellol** from oil of *Boronia citriodora* (PENFOLD), B., 803.
 determination of (RADCLIFFE and CHADDERTON), B., 849.
- Citrus** fruits, ripening and preservation of (FULTON and BOWMAN), (P.), B., 27; (HOOPER), (P.), B., 766.
 oxidising enzymes in peel of (WILLIMOTT and WOKES), A., 1176.
- trees**, sprays for (YOTHERS and WINSTON), B., 30.
- Citylhaemin** (PARTOS; GOLDMAN), A., 853.
- Civetone**, constitution and derivatives of (RUZICKA), A., 614.
- Claisen reaction** (MORGAN and HOLMES), A., 148.
- Clarain** in coal (STAOH), B., 569.
- Clay or Clays**, preparation of, prior to working (CHEM. LAB. F. TONIND. & TONIND.-ZTG. and PLATZSCH), (P.), B., 129.
 for ceramic articles (AUSTIN and OHIO BRASS CO.), (P.), B., 241.
 for use as fillers, etc. (COFFIN, KEEN, and NAUGATUCK CHEMICAL CO.), (P.), B., 249.
- treatment of** (FELDENHEIMER), (P.), B., 667*.
 compression of (BIGOT), A., 379.
 drying of (LINDSAY and WADLEIGH), B., 127.
 purification of (PARKER), (P.), B., 128; (PARENTANI), (P.), B., 917.
 purification and improvement in colour of (FELDENHEIMER), (P.), B., 55.
 apparatus for washing (REICHAU), (P.), B., 241.
 removal of iron from (FLEISSNER), (P.), B., 917.

- Clay or Clays, elimination of limestone from (HORNING), B., 361.
 constitutional changes in, on heating (GEN. ELECTRIC CO. and HYSLOP), B., 157.
 colloid chemistry of (NISHIKAWA), A., 575.
 relation of colloid content and plasticity in (FRANCE), B., 361.
 anomalous flocculation of (KERMACK and WILLIAMSON), A., 679; (COMBER), A., 1004; (OAKLEY), A., 1204.
 action of electrolytes on (KONDO), B., 14.
 influence of electrolytes on adsorption of hydrogen ions by (AARNIO), A., 1090.
 coagulation of (GALLAY), A., 354.
 mineralogy of (McDOWELL), B., 240.
 related to bentonite, minerals of, and their physical properties (ROSS and SHANNON), B., 361.
 pure, influence of ferric oxide and titanium oxide on (KUECHLER), B., 361.
 manufacture of bleaching earth from (ERDWERKE MÜNCHEN LIETZENMAYER), (P.), B., 439.
 base-exchanging water softener from (PERMUTIT-A.-G.), (P.), B., 470, 614.
 ball, mixtures of sillimanite and (COUSEN and TURNER), B., 239.
 Borowitz refractory, properties of (URASOV), B., 746.
 colloidal, anomalous flocculation in (HARDY), B., 292.
 adsorption and mobilisation of potassium in (DEMOLON), A., 673.
 use of, in preparing plant sprays (YOTHERS and WINSTON), B., 30.
 enamel (BOEKER), B., 917.
 Japanese acid, saccharification of starch by (KOBAYASHI and YAMAMOTO), A., 1015.
 residual, relation between soluble iron and colloids in (MAC-CARTHY), B., 207.
 saggar (HEINDL), B., 539.
 analysis of, by rational method (McDOWELL), B., 240.
 Clay material, highly porous, production of (LINDMAN), (P.), B., 1015.
 products, drying of (BROWN), (P.), B., 362.
 slips, hydrogen-ion concentration of (RANDOLPH and DONNEWIRTH), B., 823.
 deflocculation of (SCRIPTURE and SCHRAMM), B., 488.
 ware, de-airing in drying of (BRAND), B., 488.
 machine for transverse tests of (HARRISON), B., 127.
Clostridium thermocellum, fermentation by (PETERSON, FRED, and MARTEN), A., 1278.
 Clouds dispersed from an arc, conductivity of (WALMSLEY), A., 654.
 Clover, nitrogen content of tops and roots of (SNIDER and HEIN), A., 1066.
 effect of soil reaction on germination of (MÜLLER), A., 1066.
 sweet, in relation to the accumulation, loss, and conservation of nitrates in soil (WHITING and RICHMOND), B., 799.
 biennial white sweet, composition of, in relation to soil enrichment (WHITING and RICHMOND), B., 892.
 Clupanodonic acid, and its derivatives (TSUJIMOTO and KIMURA), A., 1226.
 Clupanodonyl alcohol, and decabromo- (TSUJIMOTO and KIMURA), A., 1226.
Clupea harengus (herring), trimethylamino oxide in (POLLER and LINNEWIEH), A., 857.
 Clupein, structure of (WALDSCHMIDT-LEITZ, SCHÄFFNER, and GRASSMANN), A., 1049.
 Clyde estuary, blacking of sand in (ELLIS), A., 378.
 Coagulation, mechanism of (LEFESCHKIN), A., 678.
 variation of the coefficient of (GARNER), A., 1204.
 by ions in relation to their valency and radii (LACHS and LACHMANN), A., 1099.
 of blood. See under Blood.
 of colloids, influence of protective colloids on (MENON, SHRIVASTAVA, and PRASAD), A., 472.
 of colloidal solutions (MÜLLER; WIEGNER and TUORILA), A., 242.
 Coal, origin of (THAYSEN, BAKES, and BUNKER), B., 305, 476*; (FISCHER), B., 393.
 bearing of base exchange on (TAYLOR), B., 568.
 definition of the term (STADNIKOV and PROSKURNINA), B., 729.
 microscopic structure of (DUPARQUE), A., 380; (THIESSEN), B., 476*.
 theories of formation of (ODÉN and LINDBERG), B., 568; (MARCUSSEN), B., 809.
 Coal, artificial production of, from cellulose and lignin, in presence of water (TROPSCH and PHILIPPOVICH), B., 858.
 constituents of (SEYLER), A., 494; (FRANCIS and WHEELER), B., 650; (PARR), B., 697.
 chemistry of (BONE and QUARENDON), B., 305.
 clarain or anthraxylon in (STACH), B., 569.
 treatment of (TRENT and TRENT PROCESS CORP.), (P.), B., 261; (ELDER, GRAHAM, and NAT. CARBON CO.), (P.), B., 397*.
 concentration of (TRURAN and MINERALS SEPARATION NORTH AMERICAN CORP.), (P.), B., 971.
 differential flotation of (QUIGLEY and MINERALS SEPARATION NORTH AMERICAN CORP.), B., 971.
 cleaning of (CHAPMAN and MOTT), B., 473, 569.
 washing of (RANWEZ), (P.), B., 264*; (ROBINSON, and SIMON CARVES), (P.), B., 476, 698; (MENZIES), (P.), B., 812; (FRANCE; HOYOIS), (P.), B., 971.
 removal of water from, after washing (BUTTERLEY Co., and WRIGHT), (P.), B., 232*.
 drying of (KOHLENVEREDLUNG Ges. and GEISSEN), (P.), B., 428.
 with waste furnace gases (JONES and FULLER FUEL Co.), (P.), B., 349.
 apparatus for drying and preheating of (ILLINGWORTH and ILLINGWORTH CARBONIZATION Co.), (P.), B., 146.
 dressing of (FRANZ), (P.), B., 701.
 agglomeration of (SEIDENSCHNUR and PAPE), (P.), B., 572, 731.
 pulverisation of (KREISINGER and COMBUSTION ENGINEERING CORP.), (P.), B., 395.
 pulverisers for (HERBERT, VERNON, and JACKSON), (P.), B., 624*; (HERBERT and BLYTH), (P.), B., 733*; (HERBERT and JACKSON), (P.), B., 780; (INTERNAT. COMBUSTION ENGINEERING CORP.), (P.), B., 940.
 grain size of samples of (KREULEN), B., 3.
 mixing and drawing samples of (KREULEN), B., 3.
 relation between physical condition of samples of, and their adsorptive power (KREULEN), B., 1001.
 blending of (BROWNIE), B., 650, 860*.
 heat of adsorption of gases by (WHITEHOUSE), B., 145.
 adsorption of carbon dioxide by (SINKINSON and TURNER), B., 697.
 suspensions of, in liquids, especially liquid fuels (HEYL), (P.), B., 431*.
 oxidation of residue from extraction of, with benzene under pressure (BONE and QUARENDON), B., 305.
 carbonisation of (ILLINGWORTH CARBONIZATION Co. and ILLINGWORTH), (P.), B., 395, 733*; (INTERNAT. COMBUSTION ENGINEERING CORP. and RUNGE), (P.), B., 428, 812; (GARROW), (P.), B., 733*; (RODGERS; HAYES), (P.), B., 812; (HAYES and COAL CARBONISATION Co.), (P.), B., 861.
 in vertical retorts (FUEL RESEARCH BOARD), B., 730.
 influence of size on (INSTITUTION OF GAS ENGINEERS), B., 1001.
 origin of carbon disulphide in (HUFF), B., 427.
 low-temperature (THAU), B., 616; (FIELDNER), B., 859; (CHAPMAN), B., 905; (PARKER), B., 937.
 tar from (PARRISH and ROWE), B., 655.
 evaluation of, for carbonisation (WEYMAN), B., 393.
 carbonisation and gasification of (MACAUX and SOC. LYONNAISE EAUX ET ÉCLAIRAGE), (P.), B., 120*; (MARSON), B., 970.
 influence of ash constituents in (MARSON and COBB), B., 1002.
 synthesis of petroleum from gasification products of (FISCHER and TROPSCH), B., 475.
 caking of (AUDIBERT), B., 225.
 coking of (KOPFERS Co.), (P.), B., 117; (GREGER), B., 305; (KERNOHAN), (P.), B., 624*; (BARASH), B., 730; (DITTO and DUNCAN), (P.), B., 779; (CULMER), (P.), B., 861; (KREULEN), B., 937.
 from Maritime Provinces, coking experiments on (HAANEL and GILMORE), B., 697.
 Mesa Verda and Pittsburgh, coking constituents of (DAVIS and REYNOLDS), B., 858.
 production of coke and tar from (SEIDENSCHNUR), (P.), B., 397*.
 transformation of, into fuel of calorific value (DEBAUCHE), (P.), B., 777.
 of recent formation, behaviour of, on prolonged heating at 110° (KREULEN), B., 394.

- Coal, distillation of (NEATH and CHANEY), (P.), B., 38; ("ALL-KOG" ALLGEM. KOHLENSVERWERTUNGS-GES.), (P.), B., 308; (GES. F. INDUSTRIE-OFFENBAU), (P.), B., 309; (PAPE), (P.), B., 862.
- recovery of by-products in (FRÉCHOU), (P.), B., 147; (TRENT and TRENT PROCESS CORP.), (P.), B., 732.
- liberation of hydrogen and methane in (L'AIR LIQUIDE), (P.), B., 350.
- low-temperature (MATTHAEI), (P.), B., 861.
- vacuum, with super-heated steam (DUNKEL), B., 865.
- steaming of, in continuous vertical retorts (BARASH), B., 938.
- distillation of sulphur-free gases from (VORENBUSCH & Co.), (P.), B., 862.
- cracking of oil and (TRENT), (P.), B., 732.
- hydrogenation of (INT. BERGIN-Co.), (P.), B., 38.
- spirit produced by (ORMANDY and CRAVEN), B., 394.
- change in weight of, during oxidation at low temperatures (KREULEN), B., 904.
- oxidation and combustion of, in storage (PARR and MILNER; PARR; PARR and COONS), B., 811*.
- oxidation and reduction of (FISCHER), B., 858.
- transient fusion of (AUDIBERT), B., 569.
- initial decomposition of, by heat (BURGESS and WHEELER), B., 225.
- primary decomposition of (UCHIDA), B., 569.
- thermal decomposition of, in presence of catalysts, and under hydrogen pressure (BOWEN and NASH), B., 905.
- combustion of particles of, in air (NEWALL and SINNATT), B., 905.
- spontaneous combustion of (FRANCIS and WHEELER; MACPHERSON, SIMPKIN, and WILD), B., 1001.
- influence of moisture on (DAVIS and BYRNE), B., 346.
- partial conversion of, into light hydrocarbons (COMP. DES MINES DE VICOIGNE, NOEUX, & DROCOURT), (P.), B., 182.
- conversion of, into oils by Bergius process (BERGIUS), B., 35; (SCHUSTER), B., 115; (SPILKER and ZERBE), B., 939.
- oil from (NIELSEN), B., 652.
- growth of fungi on (IWASAKI), B., 393.
- conversion of ligneous plant substances into (SCHWALBE and SCHNEFF), B., 145.
- plant cuticles in (LEGG and WHEELER), B., 392.
- bitumens of (BROCHE and BAIR), B., 3.
- origin of pyrites in (DONATH and VYKYPIEL), B., 650.
- testing of (KLAIBER, and KOPPERS Co.), (P.), B., 232*.
- laboratory samples of (KEMP), B., 937.
- evaluation of (LANDSBERG), B., 426.
- analysis of, and its carbonisation products (QVARTFORT), B., 1001.
- determination of agglutination value of (BARASH), B., 730.
- determination of calorific value of (SEIDEL and REHWINKEL), B., 346.
- determination of carbon in (KING and MACDOUGALL), B., 115.
- determination of value of carbonisation products of (GEIPERT), B., 938.
- determination of sulphur in (MELZER), B., 969.
- separation of (APLEYARD, BEWICK, LAYCOCK, PORTAL, and MANNERS), (P.), B., 780.
- Coal, "atomised," for smelting of non-ferrous metals (BLACK and SHAFER), B., 328.
- bituminous, washing of, by Chance sand flotation process (GREENWELL), B., 473.
- distillation of (AMER. SHALE REDUCTION Co.), (P.), B., 119; (FOLSON, RAYMOND, and NEW ENGLAND FUEL & TRANSPORTATION Co.), (P.), B., 779.
- comparative value of coko and, as fuel for low-pressure boilers (AUGUSTINE, NEIL, and MYLER), B., 347.
- sub-bituminous, from Alberta, carbonisation and washing of (STRONG), B., 697.
- coking, examination and valuation of (KATTWINKEL), B., 257, 905.
- degree of swelling of (DOLCH), B., 347, 729, 969; (PATTERSKY), B., 969.
- distillation of (A.-G. F. BRENNSTOFFVERGASUNG and HUBMANN), (P.), B., 573.
- poorly coking, metallurgical coko from (KOPPERS), (P.), B., 229.
- dry colloidal, production of (TRUTZER), (P.), B., 256.
- finely-divided, treatment of (EDSER, BEASLEY, and MINERALS SEPARATION N. AMER. CORP.), (P.), B., 41*.
- Japanese, microscopic structure and chemical properties of (IWASAKI), B., 392.
- Coal, low-ash, production of (ELEKTRO-OSMOSE A.-G.), (P.), B., 308.
- Philippine, use of, for liquid fuel (LAVA), B., 82.
- Sardinian (BINAGHI and ROMOLI-VENTURI), B., 82.
- Lower Silesian, oil from "berginisation" of (HEYN and DUNKEL), B., 809.
- Coal ash and clean coal (LESSING), B., 224.
- fusibility of (FIELDNER and SELVIG), B., 115.
- fusion points of mixtures of, with firebrick (HEWITT), B., 917.
- dust, furnaces fired with (VOGT and KIRCHHOFF), (P.), B., 473.
- supply of, to furnaces by means of compressed air (KOHLENSTAUB G.M.B.H.), (P.), B., 701.
- production of granular coal of low ash content from (SOC. DE RECHERCHES ET DE PERFECTIONNEMENTS IND.), (P.), B., 572.
- briquetting of, in stages by pressure (HOFMANN, DUNKEL, HEYN, and GROTE), (P.), B., 861.
- combustion of (v. WALTHER and STEINBRECHER), (P.), B., 729.
- liquid-air blasting cartridges for use in presence of (SPRENG-LUFT GES.), (P.), B., 388.
- explosions (GREENWALD and WHEELER), B., 178.
- stone dust as preventive of (RICE and WHEELER), B., 178.
- determination of fineness of (GREIG), B., 905.
- gas. See under Gas.
- field, Lancashire, King seam (ANON.), B., 568.
- slack, manufacture of porous building material from (NEUHAUS and ORDERBECK), (P.), B., 364.
- tar. See under Tar.
- Coatings, manufacture of (KÖLN-ROTTWEIL A.-G.), (P.), B., 988.
- protective (A. C. and M. HOLZAPFEL), (P.), B., 988.
- of metals, sprayed (SOHOOF), (P.), B., 331.
- for pipes (TALBOT), B., 837.
- Cobalt, extraction of, from iron ores (KICHLIN and BETHLEHEM STEEL Co.), (P.), B., 755.
- electrodeposition of (MADSENELL CORP.), (P.), B., 163.
- absorption spectrum of (SUR and MAJUMDAR), A., 334.
- arc spectrum of (WALTERS), A., 1070.
- under-water spark spectrum of (BUFFAM and IRETON), A., 1.
- magnetic moment of (STONER), A., 1189.
- critical potential of (THOMAS), A., 104, 1073.
- Hall effect in films of (PEACOCK), A., 565.
- removal of, from amalgams (RUSSELL, EVANS, and ROWELL), A., 911.
- and its oxide, evaporation of water from (BHATNAGAR and BHATIA), A., 900.
- pyrophoric, adsorption of hydrogen and carbon dioxide by (NIKITIN), A., 673.
- compounds of nitrophenols with (BERNARDI and PIACENTINI), A., 721.
- Cobalt alloys with aluminium, sand-cast (DANIELS), B., 710.
- with chromium and tungsten, hard (SIEMENS & HALSKE and FETKENHEUER), (P.), B., 197.
- with iron (GRENET), B., 132*.
- Cobalt bases (cobaltamines), volume relations of (EPHRAIM and SCHÜTZ), A., 785.
- nitrites of (DUVAL), A., 698.
- Aquopentamminecobalt fluorides (BIRK and BILTZ), A., 661.
- Aquopentamminecobaltic phosphate (KLEMENT), A., 1219.
- Chloropentamminecobaltic salts (BENRATH), A., 488.
- Dimolybdatotetramminecobaltic trimolybdate (PAUL and SARKAR), A., 588.
- Hexahydroxydodecamminetetraecobaltic molybdate (PAUL and SARKAR), A., 588.
- Molybdatotetramminecobaltic salts (PAUL and SARKAR), A., 588.
- Nitratotetramminecobaltic molybdate (PAUL and SARKAR), A., 588.
- Pentammino-monosulphitocobaltic sulphite (RIESENFELD and PETRICH), A., 259.
- Sulphito-amminocobaltates (RIESENFELD and PETRICH), A., 259.
- Tetramminecobalt salts, *cis*-dichloro-, and *cis*-dinitro- (DUVAL), A., 488.
- Tetramminephosphatocobalt (KLEMENT), A., 1219.
- Cobalt salts, magnetic properties of (SERRES; CHATILLON), A., 14.
- promoter action of (ROBERTSON), A., 917.
- action of hydrobromic and hydriodic acids on colour of solutions of (DENIGÈS), A., 930.

- Cobalt chloride, magnetic states of** (CHATILLON), A., 566.
 action of oxygen on heated (JELLINEK and RUDAT), A., 909.
 fluoride, crystal structure of (FERRARI), A., 664.
 hydride (WEICHSELFELDER and THIEDE), A., 373.
 hydroxide and oxide, crystal structure of (NATTA and REINA), A., 996.
 nitrite, and its complex ammonia derivatives (DUVAL), A., 697.
 pyridine compounds with (LE BOUCHER), A., 588.
 oxide, saline, crystalline structure of (NATTA and SCHMID), A., 1085.
 peroxide as catalyst (CHIRNOAGA), A., 916.
 alkali phosphites (ROSENHEIM, FROMMER, GLÄSER, and HÄNDLER), A., 696.
 selenates and sulphates, complex (MEYER and GRÖHLER), A., 925.
 alkali sulphates, paramagnetism of (JACKSON), A., 1197.
 vanadate (EPHRAIM and BECK), A., 371.
Cobaltic acid, hexacyano-, lutecobaltic salt, activity coefficients of (BRÖNSTED and BRUMBAUGH), A., 907.
Cobalt organic compounds with triaminopropane (MANN and POPE), A., 1233.
 Cobalt molybdates with organic bases (DI CARUA), A., 304.
 Cobaltic salts, complex, with triaminotriethylamine (JAEGER and KOETS), A., 697.
Cobalt detection, determination, and separation:—
 detection of (MINDALEV), A., 264; (MIKA), A., 1116.
 determination of (STREIBINGER and POLLAK), A., 492.
 separation of, from nickel (HARSHAW and HARSHAW, FULLER & GOODWIN Co.), (P.), B., 885.
Cocaine, distinction between novocaine and (GERHARDT), A., 853.
Cocculus laurifolius, alkaloids from (H. and T. KONDO), A., 82.
Cochineal compared with colouring matter from kermes (JUSTIN-MUELLER), A., 840.
Cockroaches, destruction of, with cyanogen chloride mixture (RICE), B., 30.
Cocksfoot, influence of application of superphosphates and sodium nitrate on chemical composition of stem and leaves of (FAGAN and EVANS), B., 926.
Coclaurin, and its derivatives (H. and J. KONDO), A., 82.
Cocoa, soluble, manufacture of (C. and G. BREHIER), (P.), B., 848.
 detection of arsenic in (LÜHRIG), B., 140.
 detection of shell in (PLÜCKER, STEINRUCK, and STARCK), B., 105.
 determination of fat in (RUFFY), B., 765.
 determination of husk in (KOFERBERG), B., 296.
 determination of shell in (GROSSFELD), B., 688.
Coconut charcoal. See under Charcoal.
Coconut oil, distillation of, at low pressures (WATERMAN and RIJKS), B., 499.
 deodorisation of (BROOKE), B., 836.
 detection of, in cacao butter (HANUŠ and KOMOROUSOVÁ), B., 140.
 detection of, in cacao butter and chocolate (RUFFY), B., 552.
 detection and determination of, in cacao butter (KUHLMANN and GROSSFELD), B., 165.
 determination of, in chocolate (LUKAS), B., 140.
 determination of, in mixed fats (BAUMANN, KUHLMANN, and GROSSFELD), B., 499; (FINCKE), B., 836.
 determination of, in margarine (BERTRAM, VAN DER STEUR, and VERHAGEN), B., 140.
Coconut oil-cake, effect of feeding to cows on Polenske value of butter (PARASCHIVUK), B., 73.
Cod-liver oil, spectroscopy of (SCHULTZ and ZIEGLER), A., 1065.
 emulsions, stable (SCHWARZKOPF), (P.), B., 218.
 antirachitic factor of (LESNÉ and SIMON), A., 870.
 vitamin potency of (HOLMES and PIGOTT), B., 285.
 stability of vitamin-D in (HART, STEENBOCK, and LEPKOVSKY), B., 74.
 colour reactions of (CARR and PRICE), A., 870.
Codeine, constitution of (GULLAND and ROBINSON), A., 83.
 oxidation of (CAHN and ROBINSON), A., 745.
 oxidation of, with mercuric acetate (DIETERLE and DICKENS), A., 745.
 detection of (ALOY, VALDIGUÉ, and ALOY), A., 850.
apoCodeine, pharmacology of (KRAYER), A., 431.
Codeinone, preparation of (MERCK and KRAUSS), (P.), B., 336.
Coffee, caffeine-free (KUNDIG & Co.), (P.), B., 297, 510*; (SCHWEIZER & Co.), (P.), B., 297.
 Coffee, freshly ground, in relation to "blown" tins (BLACK), B., 801.
 natural and caffeine-free (PRITZKER and JUNGKUNZ), B., 605.
 roasted, isolation of aromatic principle in (INTERNAT. NAHRUNGS- & GENUSSMITTEL A.-G.), (P.), B., 1028.
Cohesion, arrangement of substances according to power of (KIREJEV), A., 1088.
Coke, macrostructure of (ROSE), B., 181*.
 production of (TRUMBLE), (P.), B., 812.
 production and properties of (SMITH, FINLAYSON, SPIERS, and TOWNEND), B., 257.
 continuous production of (KOPPERS), (P.), B., 861.
 production of combustible gas and, from bituminous fuel (POWER GAS CORP. and RAMBUSH), (P.), B., 428.
 manufacture of (TOOGOOD), (P.), B., 779; (PATART), (P.), B., 812.
 from mixed solid and liquid fuels (BAUME), (P.), B., 573.
 cooling of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 229; (ILLINGWORTH and ILLINGWORTH CARBONIZATION Co.), (P.), B., 395, 733*.
 plant for (SCHWARTZ), (P.), B., 780.
 dry cooling of (WUSSOW), (P.), B., 573.
 quenching of (ALBACH), (P.), B., 527*.
 apparatus for (DRAKES, LTD. and DRAKE), (P.), B., 624*.
 when discharged from retorts (DRAKES, LTD. and DRAKE), (P.), B., 780.
 apparatus for quenching and conveying discharged (BARNES, BROADHEAD, and DEMPSTER & SONS), (P.), B., 1006.
 dry-quenching of (WOODALL-DUCKHAM, LTD. and REBER), (P.), B., 815.
 improvement of (L'AIR LIQUIDE), (P.), B., 573.
 determination of apparent specific gravity of (DOLCH), B., 180.
 influence of moisture on combustion of (OBERHOFFER and PIVOVARSKI), B., 905.
 combustibility of (KOLTHAUS), B., 180.
 and direct reduction in the blast-furnace (HOLLINGS), B., 490, 883.
 combustibility and structure of, from brown coals (NIEMANN), B., 1001.
 importance of combustibility of, in combustion of solid fuels (KREULEN), B., 225.
 ignition temperature and reactivity of different forms of (BUNTE), B., 257.
 reactivity of (AREND and WAGNER), B., 261*.
 apparatus for recovering heat from (BRINGENTI), (P.), B., 908*.
 influence of temperature on yield of, in crucible tests (STRACHE and MIKA), B., 225.
 comparative value of bituminous coal and, as fuel for low-pressure boilers (AUGUSTINE, NEIL, and MYLER), B., 347.
 contaminated with vegetable matter from house refuse, utilisation of (HADFIELD), (P.), B., 428.
 volatile matter in (FOXWELL), B., 937.
 blast-furnace, combustibility of (SHERMAN and KINNEY), B., 348.
 hard, manufacture of (DVORKOVITZ), (P.), B., 477.
 low-temperature, retort for the continuous production of (F. and Y. ZUYDERHONDT), (P.), B., 861.
 metallurgical, from poorly coking coal (KOPPERS), (P.), B., 229.
 petroleum, calcination of (WALDEN and NAT. CARBON Co.), B., 182.
 semi-, high-grade fuel from (KOHLENSCHIEDUNGS. GES.), (P.), B., 4.
 testing of (HAVEN), B., 651.
 determination of porosity of (ESSER and PIVOVARSKI), B., 522.
Coke ovens (Soc. GÉN. DE FOUR à COKE), (P.), B., 4; (COFFÉE & CIE.; KOPPERS Co.), (P.), B., 38; (CHOMÉ and DEPOSEZ), (P.), B., 350; (BECKERS), (P.), B., 353; (KOPPERS Co. and BECKER; KOPPERS Co. and VAN ACKEREN), (P.), B., 476; (CARPENTER), (P.), 477; (ROBERTS and CHICAGO TRUST Co.), (P.), B., 699; (SCHRÖDER), (P.), B., 778; (N. V. SILICA EN OVENBOUW MIJ.), (P.), B., 861; (DITTO and CHICAGO TRUST Co.), (P.), B., 907; (STEPHENSON), (P.), B., 940.
 charging of (COLLIN & Co. and SCHAEFFER), (P.), B., 261, 264*.
 heating of (DAVIES), B., 426; (N. V. SILICA EN OVENBOUW MIJ. and OTTO & Co.), (P.), B., 621.
 operation of (KERNOHAN), (P.), B., 907.
 path of gases in (PETIT), B., 394.
 gas off-take pipes for (MUELLER), (P.), B., 397*.
 rate of travel of fusion zones in (RYAN), B., 474.

- Coke ovens, utilisation of ferruginous limestone in (SCHNEIDER, (P.), B., 351.
 doors for (BECKERS), (P.), B., 353, 624.
 silica brick from walls of (COLE), B., 489.
 thermal conductivity of semi-silica material in walls of (GREEN), B., 947.
 regenerative (BAGLIN), (P.), B., 1004.
 construction of flues of (FABRY), (P.), B., 778.
 retort (KOPFERS Co. and VAN ACKEREN), (P.), B., 350.
 inclined retort (VAN ACKEREN and KOPFERS Co.), (P.), B., 184*.
- Coke smalls, agglomeration of, for smelting (BRÜCK, KRETSCHEL & Co. and KIPPE), (P.), B., 754.
- Colamine. See Ethyl alcohol, β -amino-.
- Colcothar. See Iron oxide.
- Collagen fibres, structure of (KÜNTZEL), B., 555.
 reversal of double refraction of, by treatment with vegetable tannins (KÜNTZEL), B., 249.
 effect of vegetable tanning on combination of, with acid (WILSON and BEAR), B., 205.
 deaminised, behaviour of (THOMAS and FOSTER), B., 291.
 isoelectric, preparation of, for tannin assay (MEUNIER and CHAMBAUD), B., 798.
- Collidine. See 2:4:6-Trimethylpyridine.
- Collinsonia anisata, oil from (MILLER and HUNT), B., 964.
- Collodion membranes. See under Membranes.
- Colloids, preparation of (MASCHINENBAU-ANSTALT HUMBOLDT), (P.), B., 177.
 thermal synthesis of (GUTBIER), A., 574; (GUTBIER and KÖHLER), A., 1003.
 chemistry of (FUCHS and PAULI), A., 22, 354; (PAULI and VALKÓ), A., 574, 901; (PAULI and PERLAK), A., 901; (MCBAIN), A., 1095; (WINTGEN), A., 1202.
 X-ray investigation of (HERZOG; MARK), A., 122.
 electric double refraction in (BJÖRNSTÄHL), A., 994.
 elasticity and flow double refraction of (FREUNDLICH, NEUKIRCHER, and ZOCHER), A., 241.
 electric charge on (KELLER), A., 351; (REINDERS; MUKHERJEE and CHAUDHURY), A., 352.
 action of an alternating current on (BLÜH), A., 23, 576.
 anisotropy in (ZOCHER), A., 122.
 effect of electrolytes on viscosity of (DHAR), A., 123.
 swelling and dispersion of, in ether-alcohol mixtures (MARDLES), A., 243.
 equilibria in systems of (RICE), A., 352.
 adsorption of, in quantitative analysis (EIGENBERGER), A., 701.
 selective adsorption of (HUGOUNENQ and LOISELEUR), A., 1091.
 coagulation of, and adsorption of ions (SEN), A., 1004.
 in presence of peptising agents (JABLZYŃSKI and G. & J. KAWENOKI), A., 1203.
 influence of hydrolysis of sols and precipitating electrolytes on (GOSH and DHAR), A., 1003.
 influence of non-electrolytes on (SEN), A., 576.
 periodicity in reactions of (KOPACZEWSKI and SZUKIEWICZ), A., 679.
 application of micurgy to (HAUSER), B., 175.
 in plants (SAMEC and KLEMEN), A., 22.
 in soils (ANDERSON and MATTSON), A., 352.
 dispersoid, preparation of (UTZINO), A., 121.
 hydrophile, electrolytic concentration of (REITSTÖTTER and LASCH), A., 352.
 concentration and purification of solutions of (BECHHOLD and HEYMANN), A., 792.
 liquid, solidification of (A.-G. CHEM. PROD. SCHEIDEMANDEL, OBERSOHN, WACHTEL, and SAKOM), (P.), B., 178.
 lyophile, influence of, on precipitation of insoluble salts (BOLAM and MACKENZIE), A., 678.
 influence of, on velocity of reaction (SAUER and DIEM), A., 914.
 negative, coagulation of (YAJNIK and BHATIA; BOUTARIC and MANIERE), A., 123.
 neutral, theory of (MCBAIN), A., 351.
 protective (SUGDEN and WILLIAMS), A., 1099.
 characterisation of (VOIOT), A., 243.
 solid protected, in soluble form (VOGEL), (P.), B., 300.
 stable dry dispersible, production of (TRUTZER), (P.), B., 256.
 suspensoid, production of (HURRELL), (P.), B., 33.
- Colloids, determination of, in sugar-house liquors (BADOLLET and PAINE), B., 507.
 Colloid chemistry in tanning (GUSTAVSON), B., 291.
 Colloid mills (RISSIK, FRASER & Co. and FRASER), (P.), B., 80.
 operation of (AUSPITZER), (P.), B., 424.
 Colloidal fibres, adsorption of water by (HEDGES), A., 1091.
 metals and their compounds, preparation of (KÖNIGSBERGER ZELLSTOFF-FABR. & CHEM. WERKE), (P.), B., 217.
 preparation of solutions of (BINZ), (P.), B., 299.
 and their oxides, use of glycogen in preparation of (HUGOUNENQ and LOISELEUR), B., 354.
 effect of sols of, in preventing detonation in internal-combustion engines (SIMS and MARDLES), B., 617.
 particles, complex formation in the synthesis of (DUMANSKI, BUNTIN, DŁĄTSCHKOWSKI, and KNIGA), A., 469.
 determination of size of (BURTON and REID; KUHN), A., 122.
 size and charge of (STRAUB), A., 902.
 measurement of charge on (KRUYT), A., 122; (HUMPHRY), A., 577; (OAKLEY), A., 791.
 number of electrical quanta on (KISTIAKOVSKI), A., 679, 1003.
 adsorption of ions by (RINDE), A., 347.
 reactions between dissolved substances and (HERZFELD), A., 677.
 sols, coagulation of, in presence of hydrogen ions (GHOSH and DHAR), A., 794.
 solutions, preparation of (SMITH), (P.), B., 224*; (AUSPITZER), (P.), B., 424; (ODERBERGER CHEM. WERKE), (P.), B., 856.
 ageing and change in electric double refraction of (FREUNDLICH and DANNENBERG), A., 471.
 cataphoresis of (IVANITZKAJA and PROSKURNIN), A., 679.
 and the second law of thermodynamics (ELBERTZHAGEN), A., 902.
 absorption of gases by (GATTERER), A., 347.
 surface tension and dimensions of molecules of (DU NOÛY), A., 902.
 shear modulus and relaxation of (HATSCHKE and JANE), A., 1003.
 viscosity of (MCBAIN), A., 351; (SEN; OSTWALD and AUERBACH), A., 470.
 influence of protective colloids on coagulation of (MENON, SHRIVASTAVA, and PRASAD), A., 472; (BOUTARIC and PERREAU), A., 576.
 antagonism of ions in neutralisation of (WEISER), A., 242.
 stability of (SEN), A., 122, 1004.
 influence of surface tension on (BOUTARIC and SEMELET), A., 1202.
 reciprocal action of (RABINERSON), A., 795.
 anomalous precipitation of (MAYANAGI), A., 1004.
 in benzene (HAUROWITZ), A., 1202.
 behaviour of textile fibres towards (HERBIG and SEYFERTH), B., 312.
 hydrophile, coagulation of (FREUNDLICH and BIRSTEIN), A., 905.
 polydisperse, coagulation of (MÜLLER; WIEGNER and TUORILA), A., 242; (TUORILA), A., 1005.
 suspensoid, protection of (ROSSI and CECCHETTI), A., 243.
 stability of, with mixed electrolytes (KRUYT and VAN DER WILLIGEN), A., 1004.
 determination of particle size of (SOÓS), A., 575.
 electrometric determination of hydrogen-ion concentration in (KUBELKA and WAGNER), B., 683.
 state, Graham's conception of (v. WEIMARN), A., 791.
 reactions between solids in the (STERKERS and BREDEAU), A., 792.
 substances, treatment of (SPENCER CHAPMAN & MESSEL and LIEBERT), (P.), B., 439.
 suspensions, electrical treatment of (ANDERSON and INTERNAT. PRECIPITATION Co.), (P.), B., 447.
 interfacial layer between aqueous and non-aqueous phases in (USHER), A., 20.
 coagulation of, by electrolytes (BOUTARIC and PERREAU), A., 905.
 sedimentation of (ILJIN), A., 905.
 systems in nitromethane (WILLIAMS and SKOGSTROM), A., 1095.

- Colophony, extraction of (STEVENSON and LITTLE Co.), (P.), B., 924.
 American (LEVY and RAALF), B., 638.
 high-grade wood (HERCULES POWDER Co., KAISER, and HANCOCK), (P.), B., 988.
 detection of, in paints and varnishes (STOCK), B., 888.
 Coloradoite, crystal structure of (HARTWIG), A., 664; (DE JONG), A., 996.
 Colorimeter (DOLD), A., 378.
 based on Ostwald's theory (MESTAN), B., 929.
 sliding scale (BERNOULLI), A., 1116.
 trichromatic, suitable for standardisation work (GUILD), B., 303.
 Colorimetric purity, computation of (PRIEST; JUDD), B., 796.
 Colorimetry, new method of (GUILD), B., 303.
 monochromatic-plus-white method of (GUILD), B., 303.
 Colostrum, woman's, analysis of (NAKAMURA), A., 858.
 Colour, theory of (DUTT), A., 830.
 and chemical constitution (MOIR), A., 403; (HODGSON and HANDLEY), A., 515; (KÖNIG), A., 522.
 fading and comparison, Osram Pointolite lamp for tests of (HOCHHEIM and KNEBEL), B., 437.
 measurement and standardisation (MARTIN), B., 479*.
 intensity of resins, varnishes, and oils, determination of (FONROBERT and PALLAUF), B., 201.
 Colours of the second order (PICCARD), A., 1079, 1080.
 ice, preventing rapid decomposition of, in printing (WINTER-NITZ; WAGNER), B., 581.
 Colour lakes, manufacture of (FARBENFABR. VORM. BAYER & Co.), (P.), B., 889.
 Colour screens in the ultra-violet, organic absorption media as (DAHN), A., 1185.
 Colouring matters (BLOCH and SCHAAF), A., 87.
 absorption coefficients of films of (PREDVODITELEV and BLINOV), A., 15.
 of beet molasses (SIMMON), B., 336.
 Colouring matters. See also:—
 Bilirubin. Hæmatoperphyrin.
 Carbonylchlorocruorin. Hæmosiderin.
 Carboxyhemoglobin. Leucoprotein.
 Chlorocruorin. Meldola's blue.
 Chlorocruorochromogen. Metachlorocruorin.
 Chlorocruorohæmatin. Myochromogen.
 Chlorocruorohæmin. Nylæmatin.
 Chlorocruoroporphyrin. Nile blue.
 Copratin. Oxyhemoglobin.
 Copratorporphyrin. Sulphæmoglobin.
 Coproporphyrin. and under Dyes.
 Columbium. See Niobium.
 Combustible products, agglomerated (GOUTAL and HENNEBUTTE), (P.), B., 812.
 Combustion, system of (WASLEY and SIBILLA), (P.), B., 42*.
 control of (SURFACE COMBUSTION Co.), (P.), B., 624*.
 mechanism of, in the Bunsen cone (RENNERT and HASLAM), B., 82.
 influence of moisture on (OBERHOFFER and PIVOVARSKI), B., 905.
 heat of. See Heat of combustion.
 utilisation of products of, in steam generators (G. & J. WEIR and WEIR), (P.), B., 223.
 of colloidal powders (MURAOUR), B., 722, 854.
 of gases in the electric discharge (FINCH and COWEN), A., 690.
 at high pressures (BONE, NEWITT, and TOWNEND), A., 480.
 utility of secondary air in (RENNERT and HASLAM), B., 83.
 of mixed gases (TERADA and YUMOTO), A., 1106.
 containing nitrogen, effect of infra-red radiation on (DAVID, RICHARDSON, and DAVIES), A., 585.
 catalytic (BONE and ANDREW), A., 33, 250; (BONE), A., 1109.
 flameless catalytic, of vapours and gases (SCHIMMEL), (P.), B., 396.
 complete, method and apparatus for (GATES), (P.), B., 37.
 surface, refractory diaphragms for (COX), (P.), B., 148*.
 Combustion apparatus (VALJEAN), (P.), B., 148*.
 Compounds, aliphatic. See under Aliphatic.
 complex, isomerism of (HANTZSCH), A., 949.
 co-ordination, *cis-trans*-isomerism of (REIHLEN), A., 457
 Compounds, conjugated, properties of (FARMER and ROSS), A., 834.
 inorganic. See under Inorganic.
 organic. See under Organic.
 volatile. See Volatile compounds.
 SpiroCompounds, formation and stability of (ROTHSTEIN and THORPE), A., 1038.
 Compton effect (HAGEN; KIRCHNER and DU MOND), A., 103; (DE BROGLIE and DAUVILLER), A., 217; (SEEMAN), A., 330; (JAUNCEY; KIRCHNER), A., 768; (WILLIAMS), A., 988; (ALLISON and DUANE; WEBSTER and ROSS), A., 1187.
 from γ -rays (HOFFMANN), A., 551.
 intensity of lines in (ROSS), A., 1187.
 disappearance of unmodified lines in (JAUNCEY and BOYD), A., 1187.
 properties of radiation in (KALLMANN and MARK), A., 551.
 correspondence principle in (BREIT), A., 551.
 from quantum mechanics (BECK), A., 875.
 distribution of energy in (WOO), A., 447.
 Concentration of liquids (HARRIS and INDUSTRIAL DRYER CORP.), (P.), B., 81.
 apparatus for (ANTISELL), (P.), B., 34.
 of solutions by freezing (JOHNSON), (P.), B., 425.
 Concentration apparatus, regulation of (SOC. DES CONDENSEURS DELAS), (P.), B., 647.
 Concrete, manufacture of (BILLNER), (P.), B., 159.
 manufacture of light forms of (BROADWAY TRUST Co., LTD., BURNEY, and TEMPLE), (P.), B., 669.
 mixing of (RUEF), (P.), B., 729.
 effect of size and shape of test piece on compressive strength of (GONNERMAN), B., 91.
 effect of calcium chloride on strength of (LEVENS), B., 825.
 strengthening and indurating of, with sulphur (KOBÉ), B., 668.
 strength of bond between steel and (ABRAMS), B., 91.
 hydration of (FITZGERALD), (P.), B., 981.
 relation between water permeability and water absorption of (ANDERSON), B., 193.
 corrosion of (BAYLIS), B., 441.
 action of sulphate water on (MILLS), B., 825.
 durability of, in alkali soils (WILLIAMS and FURLONG), B., 441.
 curing of, in a semi-arid climate (GONNERMAN and MCKESSON), B., 14; (MCKESSON), B., 408.
 aggregates, mineralised organic matter for (BURNEY), (P.), B., 544.
 mixtures, design of (ABRAMS), B., 275.
 surfaces, treatment of (JOHNSON), (P.), B., 587.
 cellular (BILLNER), (P.), B., 193.
 Portland cement, permeability of (GLANVILLE), B., 747.
 refractory (KESTNER), (P.), B., 277*.
 determination of quality of (STUMPER), B., 159.
 determination of soluble silica in (FLORENTIN), B., 668, 1015*.
 Condensation system (ATKISON and SOUTHWESTERN CONDENSER Co.), (P.), B., 857.
 Condensers (ISOM, BELL, and SINCLAIR REFINING Co.), (P.), B., 81.
 (Beckett), (P.), B., 346*.
 for fractionation (SAMUEL), (P.), B., 256.
 anastigmatic reflecting (SIEDENTOPF), A., 1118.
 counter-current jet (MÜLLER), B., 970.
 electric colloid (NODON), B., 549.
 surface (MIRRELES WATSON Co. and DEXTER), (P.), B., 696.
 zinc, prevention of oxide coating in (URBASCH & Co.), (P.), B., 711.
 apoConessine, and its salts (KANGA, AYYAR, and SIMONSEN), A., 1047.
 Confectionery products, analysis of (KUHLMANN and GROSSFELD), B., 252.
 Configuration changes, effect of structure on (HÜCKEL), A., 1024.
 Congo paper, highly sensitive (HORST), A., 594.
 Congo-red, potential differences and equilibrium between sodium chloride and, separated by a membrane (AZUMA and KAMEYAMA), A., 129.
 application of Beer's law to solutions of (ROSSI and BASINI), A., 1097.
 colour change of, in acid acetone-water solutions (CRAY), A., 1101.
 Congocopallic acid, and pentabromo-, and pentanitro- (BAUER and GONSER), A., 1226.
 Conifers, conversion of remains of, into humus and lignite (GROSSKOPF), B., 939.
 oils from seeds of (EIBNER and REITTER), B., 593.

- Conifers, pentosan content of, in relation to hardness (DOYLE and CLINCH), A., 1280.
 formation of resin and ethereal oil in (PIGULEVSKI), A., 210; (PIGULEVSKI and VLADIMIROVA), A., 210, 211; (PIGULEVSKI and GRIGORIEVA), A., 211.
- Conium maculatum*, British Columbian, alkaloidal content of (CLARK and OFFORD), B., 689.
- Constitution, chemical, determination of, by spectroscopic methods (STRECKER and SPITALER), A., 1082.
 and rotatory power (PHILLIPS), A., 159; (SINGH and PURI), A., 457; (HARRISON, KENYON, and SHEPHERD), A., 509; (DOMLEO and KENYON), A., 948; (HARRISON, KENYON, and PHILLIPS), A., 1031.
 relation of boiling point to (ADAMS), A., 568.
 relation of melting point to (VAN DER KAM), A., 1240.
 and the parachor (SUGDEN and WILKINS), A., 157.
 and colour (MOIR), A., 403; (HODGSON and HANDLEY), A., 515; (KÖNIG), A., 522.
 relation between sweetness and (TÄUFEL), A., 430.
 and pungency of acid amides (JONES and PYMAN), A., 60.
 and physiological action (STEDMAN), A., 974.
 and trypanocidal action (KING and MURCH), A., 186; (BALABAN and KING), A., 187; (HEWITT and KING), A., 746; (HEWITT, KING, and MURCH), A., 851.
- Containers, for explosive gases, filling mass for (NESS and PREST-O-LITE), (P.), B., 779.
 acid-proof (KELLY), (P.), B., 178*.
 storing and shipping, for acids and alkaline liquids (PICK), (P.), B., 649.
- Convoluta*, action of silver on, in presence of light (DRZEWINA and BOHN), A., 1274.
- Convulsions, blood changes in (WUTH), A., 1169.
- Cooking utensils, solubility of metals used in (JÄRVINEN), B., 16.
- Cooling apparatus (BECKETT), (P.), B., 346*; (CANO; SEYMOUR), (P.), B., 808; (W. G. and F. R. SIMON), (P.), B., 967.
- Cooling mixtures, danger of explosion of (STAUDINGER), A., 378.
- Co-ordination and residual affinity (MORGAN and SMITH), A., 600; (MORGAN, CARTER, and HARRISON), A., 1008; (MORGAN and BURSTALL), A., 1027.
 and co-valency (BUTLER), A., 111.
- Co-ordination compounds, magnetic properties of, in relation to atomic structure (JACKSON), A., 773.
- Co-ordination theory and electrical structure of atoms (BRIGGS), A., 1194.
- Copals, melting of (RAHDER), B., 554.
 Manila, purification of (BLUMER CHEM. FABR.), (P.), B., 288.
- Copper, earliest knowledge of (SPIELMANN), A., 1021.
 molecular weight of, as influenced by temperature (JOUNIAUX), A., 116.
 native, deposition of (WELLS), A., 265.
 deposition of, from solutions (ORKLA GRUBE ART.), (P.), B., 952.
 extraction of, from matte (HENDERSON), (P.), B., 63.
 from ores (MURDOCH), (P.), B., 548; (MACKAY), (P.), B., 673.
 from oxidised ores (PERKINS and METALS PRODUCTION), (P.), B., 96.
 from sulphide ores (SAXON), B., 94.
 from burnt pyrites (JUSCHKEVITSCH), B., 94; (CURTIUS & Co.), (P.), B., 952.
 electrolytic manufacture of (ANTISELL), (P.), B., 163.
 sheet, electrolytic manufacture of (JULLIEN), (P.), B., 134*.
 electrolytic precipitation of (GALECKI and ORLOVSKI; GALECKI and KUCZYŃSKI), A., 364; (GALECKI), A., 922; (LAIST, FRICK, and ANACONDA COPPER MINING Co.; BOSSIÈRE), (P.), B., 548.
 precipitation of, with scrap iron (RAMÉN), (P.), B., 673.
 recovery of, from ores (NEILL and MATSUKATA), (P.), B., 197; (GREENAWALT), (P.), B., 496.
 from brass or bronze scrap (LEWIN), (P.), B., 369.
 from copper-nickel matte (HYBINETTE and ANGLO-CANADIAN MINING & REFINING Co.), (P.), B., 547.
 recovery of gold, silver, and, from ores (WELCH and INTERNAT. PRECIPITATION Co.), (P.), B., 444.
 recovery of sulphur, iron, and, from sulphide ores (PIKE), (P.), B., 245.
 purification of (GES. FÜR HÜTTENMÄNNISCHE VERFAHREN), (P.), B., 711.
 reverberatory refining of (HECKMANN), B., 243.
 voltage in cells in electrolytic refining of (FINK and PHILIPPI), B., 950.
- Copper, hardening of (NEMITOF), (P.), B., 245.
 soft soldering of (CROW), B., 325, 791*.
 and its alloys, effect of cold working and annealing on physical properties of (MATSUDA), B., 93.
 cementation of, by aluminium (GUILLET), B., 633.
 cementation of, by tin (GUILLET), B., 588.
 uniting chromium group metals to (BAGLEY and ELECTRO-METALLURGICAL Co.), (P.), B., 548.
 spectrum of (BEDREAG; HICKS), A., 766.
 absorption spectrum of (ZUMSTEIN), A., 650.
 arc spectrum of (SIMEON and DREBLOW), A., 102; (BEDREAG; BEALS), A., 651; (WOLFSOHN), A., 874; (SHENSTONE), A., 1071.
 band and line absorption spectra of (STÜCKLEN), A., 1.
 flame spectra of (EISENSCHITZ and REIS), A., 556.
 X-ray spectrum of (THORÆUS), A., 1186.
 under-water spark spectrum of (BUFFAM and IRETON), A., 1.
 photochemical reactions in presence of (SANDONINI), A., 252.
 and its alloys with gold and silver, precipitation of radium-F on (TAMMANN and RIENÄCKER), A., 1190.
 electrical conductivity of, as affected by atmospheric exposure (WILSON), B., 16.
 superconductivity of (DAVEY), A., 1086.
 critical potential of (THOMAS), A., 104, 1073; (CHU), A., 1073; (COMPTON and THOMAS), A., 1186.
 effect of heat on contact potential difference between nickel and (SCHRADER), A., 1196.
 emission of secondary electrons from (PETRY), A., 989.
 thermal expansion of (KEESOM, VAN AGT, and JANSEN), A., 1197.
 influence of gases on, at high temperatures (LOBLEY and JERSON), B., 279, 791*.
 effect of immersion in liquid air on (ALEXANDER), A., 1110.
 flow of, under stress (LODE), A., 668.
 crystals, tensile strength of (ELAM), A., 1085.
 recrystallisation of (TAMMANN and MEYER), A., 783.
 etching figures on, and its crystal orientation (KÖSTER), B., 750.
 and its oxide, adsorption of ethylene and hydrogen by (LAZIER and ADKINS), A., 467.
 equilibrium of cupric and cuprous ions with (FENWICK), A., 577.
 equilibrium of, with iron in the molten state (RUEK and KUSHMANN), A., 786.
 solubility of, in pyridine solutions of benzoin and of aldehydes (MOHLER), A., 71.
 solution of, in aqueous ferric chloride (BEKIER and TRZECIAK), A., 482.
 low-temperature oxidation of (DUNN), A., 692.
 oxide films on (EVANS), A., 20; (VERNON), A., 1108.
 corrosion of, by kerosene (STAUDT), B., 3.
 tarnishing of, in sulphur vapour (FISCHEBECK), A., 692.
 containing bismuth (STAIL), B., 161.
 cuprous oxide in (SIEBE), A., 786.
 catalytic hydrogenation of carbonyl groups with (KUBOTA and HAYASHI), A., 520, 727.
 catalytic removal of oxygen from ammonia-synthesis gases by (ALMQUIST and CRITTENDEN), B., 820.
 and its oxide, as catalysts in combination of carbon monoxide and oxygen (BONE and ANDREW), A., 250.
 action of ammonium chloride and of hydrogen chloride on (HOFMANN and HARTMANN), A., 37.
 hot solid, action of hydrogen on (SMITH and HAYWARD), B., 829.
 reaction of selenium tetrachloride with (TAYLOR, PRIDEAUX, and POOL), A., 925.
 action of sulphuric acid on (ROGERS), A., 587.
 blister, production of, from black copper (MERRISS and NICHOLS COPPER Co.), (P.), B., 444.
 catalytic (CONSTABLE), A., 250, 1195, 1216.
 cold-rolled, production of regular structure in recrystallisation of (KÖSTER), B., 546.
 hardness of (HOYT and SCHERMERHORN), B., 325; (HOYT), B., 791*.
 colloidal, preparation of, by Bredig's method (PODROUŽEK), A., 1003.
 electrolytic and refined, influence of cuprous oxide on (ALT-WICKER), B., 243.
 hair, formation of, in copper mattes (TIEDEMANN), B., 710.
 poisoning. See under Poisoning.
 powdered, production of (SEYFFERTH), (P.), B., 885.
 formation of, in anode mud from refining (THOMPSON), B., 588.

- Copper, powdered, use of, in analysis (KÜRSCHNER and SCHARRER), A., 490.
 reduced, catalytic action of, on alcohols (HARA), A., 918.
 on oximes (YAMAGUCHI), A., 520, 616.
 on pinacones (YAMAGUCHI), A., 727.
- Copper alloys, manufacture of (KAZEMER), (P.), B., 163; (CORSON), (P.), B., 885.
 influence of shrinkage on mechanical properties of (GUILLET), B., 950.
 cementation of, by tungsten, molybdenum, and tantalum (LAISSUS), B., 545.
 with aluminium (BRITISH ALUMINIUM CO., GWYER, and PHILLIPS), (P.), B., 132; (JEFFRIES, ARCHER, and ALUMINUM CO. OF AMERICA), (P.), B., 369.
 heat treatment of (GUILLET and GALIBOURG), B., 443.
 quenching of (GUILLET and GALIBOURG), B., 92.
 with aluminium and tin, copper-rich (STOCKDALE), B., 279, 792*.
 with aluminium, tin, and zinc, structure of (WESTOREN and PIKACMÉN), A., 1084.
 with aluminium and zinc, constitution of (HANSON and GAYLER), B., 328*.
 with cadmium, physical properties of (JENKINS), B., 328*.
 with cadmium and magnesium (ROSTHORN), (P.), B., 635.
 with calcium (HARVEY and AMER. MAGNESIUM CORP.), (P.), B., 133.
 with carbon and iron (ISHIWARA, YONEKURA, and ISHIGAKI), A., 683.
 with gold, crystal structure of (JOHANSSON and LINDE), A., 112.
 tarnishing of, in oxygen, carbon dioxide containing hydrogen sulphide, and in air containing iodine (TAMMANN and RIENÄCKER), B., 1017.
 with gold and silver (STERNER-RAINER), A., 666.
 with iron, treatment of (PEDERSEN and ORKLA GRUBEAKTIEBOLAG), (P.), B., 64*.
 with magnesium (COOK and JONES), B., 830.
 with nickel (GRAHAM and U.S. INDUSTRIAL ALCOHOL CO.), (P.), B., 63; (LEHR and U.S. INDUSTRIAL ALCOHOL CO.), (P.), B., 283.
 mechanical properties of, at high temperatures (TAPSELL and BRADLEY), B., 280, 792*.
 with phosphorus and tin (GLASER and SEEMANN), B., 411.
 with silicon (DENECKE), (P.), B., 984.
 with silver (SCHEID'SCHE AFFINERIE), (P.), B., 549.
 with tin, hardness of (MALLOCK), A., 671.
 equilibrium of (STOCKDALE), B., 328*; (ISHIWARA), B., 671.
 with zinc, segregation phenomena in (CLAUS), B., 750.
 β -transformation in (HAUGHTON and GRIFFITHS), B., 328*.
 rate of oxidation of, at high temperatures (DUNN), A., 692.
 containing 45-65% Cu, constitution of (GAYLER), B., 328*.
- Copper bases (*cuprammines*), salts of (LANGE), A., 1112, 1216.
- Copper compounds for use in combating fungi (NEWHALL), (P.), B., 1014.
 effect of, on carcinoma in rats (LUKÁCS), A., 636.
- Copper salts, catalytic action of, in decomposition of chlorides by sulphuric acid (BODNÁR and ROTH), A., 1011.
 action of, on respiration of plant cells (COOK), A., 760.
 in diet, effect of, on growth (McHARGUE), A., 972.
 basic, electrometric and phase-rule study of (BRITTON), A., 246.
- Copper arsenate and arsenite, preparation of (I. G. FARBENIND.), (P.), B., 743.
 carbonate, preparation of, electrolytically (HOWARD and GRASSELLI CHEMICAL CO.), (P.), B., 126.
 basic, treatment of wheat with (HALL), B., 993.
 carbonate and thiosulphate, complex and double salts of (BENRATH, NIEHAUS, MECKENSTOCK, and ESSERS), A., 367.
 hydride (HÜTTIG and BRODKORB), A., 694.
 crystal structure of (MÜLLER and BRADLEY), A., 889.
 hydrides, X-ray examination of (QUILICO), A., 996.
 sulphate, crystalline, production of (AGDE), (P.), B., 915.
 manufacture of solutions of (KLEINMANN), (P.), B., 156.
 electrolysis of acid solutions of (REDMAN), A., 130; (BURT-GERRANS), A., 479.
 equilibrium of aluminium sulphate, water, and (OCCLESIAW), A., 26.
 coating of, with inert powder (BUNDS and SAN JOSE SPRAY MANUF. CO.), (P.), B., 126.
 separation of ferrous sulphate and, by crystallisation (AGDE and BARKHOLT), B., 707.
 sulphates, basic (BELL and MURPHY), A., 798; (FOWLES), A., 922.
- Copper sulphide, equilibrium of ferrous sulphide, sulphur, and (TIEDEMANN), B., 710.
 vanadate (EPHRAIM and BECK), A., 371.
- Cupric salts, equilibrium of the reaction of iodides on (KOLTHOFF), A., 255.
- Cupric bromide, action of hydrobromic acid and alkali bromides on, in acetic acid solution (DENIGÈS), A., 922.
 chloride, action of oxygen with heated (JELLINEK and RUDAT), A., 909.
 oxide (RUEB and BODE), A., 1075.
 electromotive properties of (MADDISON), A., 130.
 oxidation of organic compounds by (STEOPOE), A., 595.
 adsorption of carbon oxides and oxygen by, and its mixtures with manganese dioxide (HOSKINS and BRAY), A., 807.
 mixtures of manganese dioxide and, as catalysts (BRAY and DOSS), A., 917.
- Cuprous chloride, electrolysis of solutions of, in hydrochloric acid or alkali or alkaline-earth chlorides (HÄNSEL), A., 483.
 absorption of carbon monoxide by (MOSER and HANIKA), A., 375.
 action of, on brass (MASING and MIETHING), A., 486.
 reduction of, by hydrogen (PARRAVANO and MALQUORI), A., 799.
 halides, isomorphism of silver halides and (REIOHEI), A., 562.
 iodide, band spectrum of (MULLIKEN), A., 1079.
 sulphide, solid, mobility of ions in (BRAUNE), A., 128.
- Copper organic compounds (MORGAN and BURSTALL), A., 1027.
 with oximes (FEIGL, SICHER, and SINGER), A., 70.
 with triaminopropane (MANN), A., 1234.
- Cupric compounds with ethylenediaminebisacetylacetone (MORGAN and SMITH), A., 600.
 iodide, thermal measurements of ethylenediamine complexes with (MORGAN, CARTER, and HARRISON), A., 1008.
- Copper determination and separation:—
 determination of (AZZALIN), A., 140; (ROSENDAHL), B., 243.
 determination of, electrolytically, in presence of bismuth (MOEDENHAUER), A., 592.
 determination of, gravimetrically (KOLTHOFF and KUYLMAN), A., 592.
 determination of, iodometrically (SCHOORL and BEGEMANN), A., 40.
 determination of, by the iodide method (DUNNICLIFF and RAM), A., 376.
 determination of, in foodstuffs (LAMPITT, HUGHES, BILHAM, and FULLER), B., 719.
 determination of, in preserved vegetables (BIAZZO), B., 382.
 determination of, in uranium ores, volumetrically (RUSSELL), B., 328.
 determination of bismuth in (JONES and FROST), B., 633, 671.
 determination of cadmium in (BLAZER), A., 491.
 determination of iron and, in metallurgical products by potentiometric titrations (BUEHRER and SCHUPP), B., 282.
 separation of, electrolytically, from cadmium (JILEK and LUKAS), A., 262.
 separation of, from copper-nickel mattes (INTERNATIONAL NICKEL CO. and STANLEY), (P.), B., 921.
 separation of, from molybdenite (POKORNY), (P.), B., 496.
 separation of nickel and (GIERTSEN and KRISTIANSSANDS NIKKELRAFFINERINGSVERK), (P.), B., 370.
- Copper anodes. See under Anodes.
- Copper deposits, Keweenaw, minerals of (PALACHE and VASSAR), A., 709.
- Copper mattes, composition of (BOGITCH), B., 281.
 leaching of, with nitric acid (SIXT), B., 16.
 removal of iron from (BOGITCH), B., 634.
- Copper mirrors, production of, on glass (BAMBERGER and SCHWEIZER), (P.), B., 241.
- Copper-nickel mattes, refinery of (PEEK, TORELL, and NAT. TRUST CO.), (P.), B., 245.
- Copper ores, treatment of (GREENAWALT), (P.), B., 330; (PIKE and WEST), (P.), B., 711; (MACKEY), (P.), B., 921*.
 mixed, leaching of, with ferric sulphate (VAN ARSDALE), B., 59.
 oxidised, heat treatment of (MOULDEN, TAPLIN, and METALS PRODUCTION), (P.), B., 590, 885.
- Copper pipes, action of water on (THRESH and BEALE), B., 468.
- Copper tubes, arsenical, season-cracking in (PINKERTON and TAIT), B., 820.
- Copratin (SCHUMM), A., 87.
 occurrence and detection of (SCHUMM and MERTENS), A., 1048.

- Copratin, origin of, in blood (SCHUMM), A., 1208.
in faeces (SCHUMM and DANKMEIER), A., 317.
- Copratoporphyrin, occurrence and detection of (SCHUMM and MERTENS), A., 1048.
from blood, spectra of (SCHUMM), A., 1286.
- Coproporphrin, synthesis of, by yeast (FISCHER and FINK), A., 324; (FISCHER), A., 544; (FISCHER and HILMER), A., 758; (SCHUMM), A., 1048.
synthesis and derivatives of (FISCHER and ANDERSSON), A., 1261.
methyl ester, cadmium and manganese salts of (FISCHER and HILGER), A., 189.
detection of (SCHUMM), A., 538.
- Coptis japonica*, alkaloid from (KITASATO), A., 1160.
- Coptisine, and its tetrahydro-derivative (KITASATO), A., 1160.
- Cordite powders, Waltham Abbey test for (VIGNAU and BABUGLIA), B., 723.
- Co-reductase, purification of (v. EULER and NILSSON), A., 868.
- Cork, manufacture of rubber products containing (GRIMOIN-SANSON), (P.), B., 205.
- Corn products waste, treatment of (MOHLMAN), B., 998.
- Corncockle. See *Agrostemma githago*.
- Cornflour, sweet-potato starch in (STUBBS), B., 800.
- Cornuete (v. HAHN), A., 1022.
- Cornus florida*, scyllitol and inositol from (HANN and SANDO; SANDO), A., 982.
- Cornus sanguinea*, constituents of bark of (ZELLNER), A., 983.
- Corpus luteum, constituents of (CARTLAND and HART), A., 424; (HART and HEYL), A., 424, 857.
lipins in (HERMSTEIN), A., 316.
- Corresponding states, theory of, applied to surface phenomena (BOITARD), A., 343.
- Corrosion, chemical and physical processes in (BAUER), B., 56.
effect of differential aeration on (MCAULAY and BOWDEN), A., 33.
of boiler tubes and superheaters, influence of segregation on (WOODVINE and ROBERTS), B., 471.
in gas meters (FIRTH), B., 474.
of metals, theory of (PALMAER), B., 589.
by acids (EVANS), A., 805; (McCULLOCH), A., 800.
fringes in (PORTEVIN), B., 328.
metals resistant to (FRENCH), B., 951.
in plant traversed by liquids (v. WURSTENBERGER), (P.), B., 728.
by natural waters, influence of hydrogen-ion concentration on (BAYLIS), B., 95.
of water conduits consisting of pipes of two different metals, reduction of (CASSEL), B., 95.
prevention of (BAYLIS), B., 694.
in manufacture of fuel gas (COOPER, HENSHAW, and HOLMES & Co.), (P.), B., 428.
protection of metallic surfaces against (THALHOFFER and A.-G. F. CHEM. IND. IN LIECHTENSTEIN), (P.), B., 472.
intensive, and porosity (EVANS), B., 365.
liquid-lino (HEDGES), A., 581.
- Corundum, production of, in the electric furnace (VIERHELLER), (P.), B., 322.
elutriation process for (VIERHELLER), B., 542.
- Corybulbine, and its salts (GADAMER and SAWAY), A., 1161.
- n*- and *iso*-Corybulbines (v. BRUCHHAUSEN and SAWAY), A., 185.
- Corycavamine, constitution of (v. BRUCHHAUSEN), A., 184.
- Corycavidine, constitution and derivatives of (v. BRUCHHAUSEN), A., 184.
- Corydalis alkaloids (v. BRUCHHAUSEN and SAWAY), A., 185; (SPÄTH and MOSETTIO), A., 965.
- Corydalis cava*, alkaloids from (v. BRUCHHAUSEN and SAWAY), A., 185; (SPÄTH and MOSETTIO), A., 965.
- Cosmetic, ancient Egyptian (CHAPMAN and PLENDERLEITH), B., 986.
- Cotton, action of light on (KAUFFMANN), B., 817.
adsorption of electrolytes by (LIEPATOV), A., 573.
absorption of methylene blue by, from buffered solutions (CLIBBENS and GEAKE), B., 528.
absorption of sodium nitrate by (APPLETON and HELMS), A., 871.
affinity of derivatives of dehydrothiitoluidine and primuline for (RUGGLI and PESTALOZZI), B., 436.
ash content and ash alkalinity of various types of (FARGHER and PROBERT), B., 186.
amidation of (KARRER and WEHRLI), B., 659.
effects of oxidation of, before and after mercerisation (KNECHT and MULLER), B., 269.
- Cotton, moisture relations of (URQUIHART and WILLIAMS), B., 186.
losses during scouring of (FARGHER and HIGGINBOTHAM), B., 529.
protection of, from mildew (BRITISH DYESTUFFS CORP., RENSHAW, and FAIRBROTHER), (P.), B., 1009.
linen-like effect on (CLARK and ERLANGER), (P.), B., 124; (HÉBERT and VERGÉ), (P.), B., 125; (MATT), (P.), B., 437.
production of scroop effects on (SUNDER), B., 86.
dyeing of. See under Dyeing.
mordant for (SELLET), (P.), B., 153.
waxes from different kinds of (LECOMBER and PROBERT), B., 150.
Egyptian and Upland, leaf-tissue fluids of (HARRIS and C. T. and W. F. HOFFMAN), A., 441; (HARRIS, HOFFMAN, SINCLAIR, JOHNSON, and EVANS), A., 548; (HARRIS), B., 842.
mercerised, treatment of, to make it resistant to absorption of direct dyes (CHEM. FABR. SANDOZ), (P.), B., 270.
determination of degree of mercerisation of (HALLER), B., 483.
"philanised," X-ray interference diagram of (KATZ and HESS), B., 737.
raw, conditioning of (BORNE SCRYMSER Co., and SMITH), (P.), B., 626.
chemical analysis of (LECOMBER and PROBERT), B., 150; (FARGHER and PROBERT), B., 186; (CLIBBENS and GEAKE), B., 528; (BIRTWELL, CLIBBENS, and GEAKE; FARGHER and HIGGINBOTHAM), B., 529.
differentiation of kapok and (LEJEUNE), B., 355.
separation of silk material from (TAYLOR and TAYLOR LABORATORIES), (P.), B., 819.
- Cotton cloths and yarns, detection and determination of glycerol in (SMITH), B., 530.
- Cotton fabrics, thermal properties of (GREGORY), B., 944.
containing artificial silk, mercerisation of (CALICO PRINTERS' Assoc. and LANTZ), (P.), B., 976.
- Cotton goods, common faults in (SUMMERS), B., 150.
mildew in (MORRIS), B., 186, 187.
sized, identification of fatty ingredients in (LECOMBER and PROBERT), B., 150.
determination of chlorides, zinc, magnesium, and glycerol in (NEALE), B., 974.
- Cotton hairs, examination of, by the Congo-red test and by Fleming and Thaysen's swelling test (BRIGHT), B., 870.
- Cotton plant, non-volatile constituents of (POWER and CHESNUT), B., 991.
- Cotton yarn, finishing of (RHODIN and WESTMAN, LTD.), (P.), B., 914.
"immunised" (FAURLÄNDER), B., 703.
- Cotton-seed, fifty years of (WESSON), B., 837.
- Cotton-seed meal, N. Carolina, gossypol and *d*-gossypol content of (SHERWOOD), B., 564.
- Cotton-seed oil, hydrogenation of, with platinum (RICHARDSON, and SNOODY), B., 678.
oxidation of (CHATTERJI and FINCH), B., 923.
micro-reaction for (PRESCHER), B., 592.
crude, constituents of (JAMESON and BAUGHMAN), B., 592.
- Coumarandiones, condensation of, with coumaranones (STOLLÉ and STAMM), A., 1253.
- Coumaran-2-one, 5-chloro-2-bromo- (FRIES and SAFTIEN), A., 849.
- Coumaranones, condensation of, with coumarandiones (STOLLÉ and STAMM), A., 1253.
- Coumarin, 3-bromo-6-amino- (DEY and SESHADRI), A., 1159.
2-imino-, derivatives of (HOUBEN and PFANKUCH), A., 951.
- Coumarone, 4-chloro-, semicarbazone, and 4-chloro-3-hydroxy-, acetyl derivative (WITTIG, BANGERT, and RICHTER), A., 301.
- Cows, calcium equilibrium in diet of (HART, STEENBOCK, ELVEHJEM, SCOTT, and HUMPHREY), A., 540.
calcium phosphato in diet of, and its effect on milk (LINDSEY and ARCHIBALD), A., 429.
perhydridase in colostrum and milk of (MICHLIN), A., 433.
protein maintenance requirements for (FORBES, FRIES, and KRISS), A., 862.
dairy, calcium and phosphorus assimilation by (MILLER, MEIGS, TURNER, HARDING, HARTMAN, and GRANT), A., 862.
- Co-enzyme (VIRTANEN; NEUBERG and GOTTSCHALK), A., 95; (JORPES, v. EULER, and NILSSON), A., 868.
insulin in relation to (VIRTANEN and KARSTRÖM), A., 435.
- Crab. See *Cancer pagurus*.
- Cream, recovery of oil or fat from (MILK OIL CORP.), (P.), B., 106*, 339*.
extraction of oil and casein from (NORTH and MILK OIL CORP.), (P.), B., 607.

- Cream, artificial, production of (NORTH and MILK OIL CORP.), (P.), B., 607.
 natural and separated, leucocyte content and catalase number of (HEKMA), B., 337.
 analysis of confectionery products containing (KUHLMANN and GROSSFELD), B., 252.
- Cream of magnesia. See Magnesium oxide.
- Creatine, dissociation constant of (EADIE and HUNTER), A., 577.
 fate of, in man (CHANUTIN), A., 429.
 effect of light on excretion of (EICHELBARGER), A., 974.
 in relation to carbohydrate metabolism (PALLADIN), A., 90.
 relation of, to protein and carbohydrate metabolism (LIEBEN and LASZLO), A., 1272.
 identification of (WILLIAMS and LASSELLE), A., 505.
- Creatinine, ionisation constant of (McNALLY; EADIE and HUNTER), A., 577.
 effect of light on excretion of (EICHELBARGER), A., 974.
 decomposition of, with barium hydroxide (GAEBLER), A., 1129.
 metabolism. See Metabolism.
 determination of, in soup-preparations (MÜLLER), B., 765.
- iso-Cresol, and 2,6-dinitro-, and their salts and acetyl derivative (GRAESSER-THOMAS, GULLAND, and ROBINSON), A., 1035.
 nitration of, and 2-nitro-6-amino-, and their derivatives (GULLAND and ROBINSON), A., 1035.
- Cresote, emulsification of (BILLINGHAME), (P.), B., 655.
 removal of, from tar and tar-oils by means of solid calcium hydroxide (v. WALTHER and BIELENBERG), B., 310.
 lignite-tar, oxidation of, under pressure (KÁRPÁTI), B., 310.
- Cresol, crude, determination of phenol in (QVIST), B., 624.
- o-Cresol, 4:5:6-tribromo-, and its methyl ester (KOHN and SOL-TÉSZ), A., 395.
- m-Cresol, 4-chloro- (KRAAY), A., 1034.
- p-Cresol, 3-aminothio-, zinc salt (BOGERT and ALLEN), A., 744.
- Cresols, equilibria of phenol and (RHODES, WELLES, and MURRAY), A., 17.
 emulsions in the system, gelatin, water, and (WOODMAN), A., 676.
 molecular compounds of (WEISSENBERGER, SCHUSTER, and WOJNOFF), A., 282; (WEISSENBERGER, SCHUSTER, and HENKE), A., 283.
 recovery of phenol and (CRAWFORD), (P.), B., 527.
 desulphurisation of (STADNIKOV, GAVRILOV, and RAKOVSKI), B., 353, 575.
 reduction of (STADNIKOV, GAVRILOV, and VINOGRADOV), B., 148.
 by the Bergius process (FISOHER and TROPSCH), B., 148.
 sulphonamide and sulphonyl chlorides of (POLLAK, GEBAUER-FÜLNEGG, and RIESZ), A., 514.
 α-naphthylurethanes from (FRENCH and WITTEL), A., 839.
 determination of, bromometrically (DANCKWORTT and SIEBLER), B., 942.
- Cresols, bromonitro-, and their derivatives (KOHN and SEGEL), A., 832.
- o- and m-Cresols, 4-halogeno-, 4-halogeno-amino-, and 4-halogeno-nitroso- (HODGSON and MOORE), A., 1034.
- o- and p-Cresols, equilibrium between (HILL and DAVIS), A., 1134.
- m-Cresols, chloro-, and their derivatives (GIBSON), A., 832.
- iso-o-Cresol-tetrachlorophthalein, derivatives of (ORNDORFF and SCHADE), A., 519.
- Cresol-gelatin, preparation and optical behaviour of (MÖHRING), A., 1098.
- m-Cresolsulphonaphthalein, and tetrabromo-, and their salts and derivatives (ORNDORFF and PURDY), A., 1037.
- Cresylic acid from petroleum distillates (CATLIN), B., 698.
- Critical point, investigations in the region of (BENNEWITZ and SPLITZBERGER), A., 1210.
 potentials and energy levels of elements (STONER), A., 773.
 temperature, absolute (PRUDHOMME), A., 16, 462.
 and pressure of alkali halides (VAN LAAR), A., 341.
 volume (SCHUSTER), A., 670.
- Crops, drying of (DONALD), (P.), B., 644.
 artificially (OWEN), (P.), B., 460, 644.
 concentration of carbon dioxide in air close to (KEUHL), B., 1025.
 studies on nitrogen availability for (SINGLETON), B., 842.
 manuring of, in relation to disease resistance (THOMAS), B., 842.
 effect of manuring with straw on yield of (GERLACH), B., 139.
- Crossite, composition of (GOSSNER), A., 595.
- Crotonaldehyde, manufacture of (CARBIDE & CARBON CHEMICALS CORP.), (P.), B., 76; (HERRLY and CARBIDE & CARBON CHEMICALS CORP.), (P.), B., 610; (LOMMEN and CARBIDE & CARBON CHEMICALS CORP.), (P.), B., 770.
- Crotonaldehyde, antiseptic action of (BERTHELOT and AMOUREUX), A., 756.
- Crotonic acid, cholesteryl ester (SOC. CHEM. IND. IN BASLE), (P.), B., 141.
- Crotonic acids, thallos salts (WALTER), A., 712.
- Crotononitrile, trimeric, and its derivatives (BRUYLANTS and MATHUS), A., 1027.
- Crucibles, mixture for manufacture of (MASCHINENFABR. OERLIKON), (P.), B., 129.
 for aluminium alloys, refractory lining for (FRARY and ALUMINUM CO. OF AMERICA), (P.), B., 330.
 for molten metals (GEISENHÜNER and GEN. ELECTRIC CO.), (P.), B., 756.
 analytical (SMITH), A., 41, 260; (W. & J. GEORGE, LTD. and SMITH), (P.), B., 650*.
 metallurgical, manufacture of (JACKMAN and VESUVIUS CRUCIBLE CO.), (P.), B., 241.
 porcelain (KÖNIG and STAATL. PORZELLAN-MANUFAKTUR), (P.), B., 129*.
 for filtering in gravimetric analysis (MOSER and MAXYMOWICZ), A., 589.
 sintered glass, use of, for separation of digitoninsteride in examination of fats for phytosterol (PRESCHER and CLAUS), B., 285.
 in sugar determinations (ELSDON), B., 169.
- Crusher, gyratory cone (SYMONS and SYMONS BROS.), (P.), B., 775.
- Crushing of ferruginous and agglutinative substances (ELENBAAS), (P.), B., 114.
 apparatus (CHAMBERS), (P.), B., 648.
 discs (SYMONS), (P.), B., 3*.
 fine, gyratory apparatus for (SYMONS), (P.), B., 111.
- Crustacea, canned, formaldehyde in (DILL and CLARK), B., 339.
- Cryolite, artificial, preparation of, free from iron (CHEM. FABR. GRIESHEIM-ELEKTRO), (P.), B., 89.
- Cryoscopy in nitrobenzene (BROWN and BURY), A., 675.
 in sodium sulphate decahydrate (PIERRET), A., 574.
- Cryostats, non-inflammable liquids for (KANOLT), A., 707.
 automatic (SHINOZAKI and HARA), A., 1118.
- Cryptopine, synthesis of (HAWORTH and PERKIN), A., 964.
- Cryptopyrrole methene hydrobromides, brominated, anilide from (FISCHER and KLARER), A., 1261.
- Cryptopyrrolecarboxylic acid, methene hydrobromide from (FISCHER and ANDERSAG), A., 1261.
- Cryptopyrrolecarboxylic acids, synthesis of (FISCHER and NENITZESCU), A., 178.
- Cryptotaenene, and its derivatives (HIRANO), A., 408.
- Cryptotaenia japonica (mitsuba-zeri), terpenes from (HIRANO), A., 408.
- Crystals, structure of (WEISSENBERG), A., 459.
 various (v. OLSHAUSEN), A., 226.
 in relation to atomic structure (HUGGINS), A., 458; (CREMORE), A., 561.
 and molecular structure (REIS), A., 934.
 with anomalous optical properties (RINNE), A., 459, 1085.
 relation between, and atomic number (SCOTT), A., 662.
 model to show (WYCKOFF and KSANDA), A., 662.
 measurement of angles of, under the microscope (HILL), A., 458.
 determination of parameters of (HAVIGHURST), A., 995.
 atomic numbers and properties of ions in lattice of (SCOTT), A., 994.
 distinction between ionic and atomic lattice of (VAN ARKEL), A., 780.
 symmetry of (ROGERS), A., 1194.
 symmetry of ions in lattice of (EHRENBORG), A., 338.
 pores in lattice of (KOENIGSBERGER), A., 562.
 interatomic distances in (BRAGO), A., 780.
 apparatus for concentrating and cooling aqueous liquids to produce (MEYNARDIE), (P.), B., 31.
 calculation of physical properties of (LENNARD-JONES and TAYLOR), A., 11.
 reflexion of Röntgen rays by (MARK and SZILARD), A., 330; (BRAGO, DARWIN, and JAMES; SCHLAPP), A., 663; (WILLIAMS), A., 988.
 effect of size of, on X-ray reflexion (HAVIGHURST), A., 780.
 luminescence of, and triboluminescence (LONGCHAMON), A., 660.
 model gratings to show the diffraction of Röntgen rays by (BRAGO), A., 12.
 photo-electric effect in (LUKIRSKY, GUDRIS, and KULIKOWA), A., 777.

- Crystals, and their aggregates, photo-electric conductivity of (JOFFÉ and ZECHNOWITZER), A., 224; (GYULAI), A., 225.
 electrical conductivity in (SMEKAL), A., 564.
 electrical conductivity of, and their aggregates (v. HEVESY), A., 667.
 bending of (BOSANQUET), A., 115.
 plasticity of (BECKER), A., 230.
 flow of (RINNE), A., 461.
 elasticity and strength of (FRENKEL), A., 783.
 thermal agitation in (FRENKEL), A., 338.
 dynamics of melting of (BRAUNBEK), A., 999.
 chemical effects with (RINNE and GRÄFE), A., 562.
 reactions in powdered mixtures of (TAMMANN, WESTERHOLD, GARRE, KORDES, and KALSING), A., 131.
 growth of (TERPSTRA), A., 339.
 variation of angles of, during growth (HEDGES), A., 563.
 oriented growth of, in contact (ROYER), A., 339.
 growth and dissolution of (VOLMER and ADIKARI), A., 349.
 eutectic, deformation twins in (VOGEL), A., 896.
 growing, production of, with piezoelectric properties (NICOLSON and WESTERN ELECTRIC CO.), (P.), B., 636.
 force exerted by (CORRENS), A., 666.
 hygroscopic, condensation of water from the air on (OWENS), A., 494.
 large, production of (KYROPOULOS), A., 926; (GEN. ELECTRIC CO. and PATENT TREUHAND GES. F. ELEKTR. GLÜHLAMPEN), (P.), B., 144.
 metallic, plastic deformation of (MILLINGTON and THOMPSON), A., 666, 1085; (WRIGHT), A., 783.
 mixed (BARTH and LUNDE), A., 895.
 formation of (HÜTTIG and MENZEL), A., 900.
 X-ray structure of (FRIEDEL), A., 562.
 distribution of atoms in (v. LAUR), A., 12; (TAMMANN), A., 459.
 new types of (BALAREV), A., 1195.
 anomalous (CAGLIOTTI), A., 588.
 liquid (WALTER), A., 17.
 supersaturated (RUER), A., 786.
 separation of (FRAENKEL, SCHALLER, and QUINCKE), A., 896.
 single, conductivity of, compared with that of crystal conglomerates (TAMMANN and VESZI), A., 461.
 solid aliphatic, heat capacities of (SALANT), A., 784.
 tetrahedral, ionic charges in (NIESSEN), A., 662.
 Crystal hydrates, vapour pressure of (BERGMAN), A., 125.
 molecular volume of water in (MOLES), A., 336.
 mechanical disintegration of (HAGIWARA), A., 119.
 Crystalline powders, Röntgen-ray analysis of (LEVI), A., 227.
 Crystallisation (HOWARD and GRASSELLI CHEMICAL CO.), (P.), B., 31.
 apparatus for continuous (HOWARD and GRASSELLI CHEMICAL CO.), (P.), B., 32.
 use of rotating tubes in (BARKHOLT), B., 143.
 vessels for (AKTIESELSKAPET KRYSTAL and A./S. DE NORSKE SALTVERKER), (P.), B., 31.
 of solutions (FRANCE), (P.), B., 2.
 Crystallisers (KERMER), (P.), B., 392.
 Crystalloids, separation of, by dialysis (KAHLENBERG), A., 349.
 Crystal-violet, adsorption of, on glass, colloidal gold and colloidal selenium (VAN DER GRINTEN), A., 467.
 Crystobalite, transition temperature of (WEIL), A., 665.
 Culture solutions, apparatus for preparation of (HILDEBRANDT), A., 142.
 effect of plants on (HIBBARD), A., 547.
p-Cumaldehyde acetal (BERT), A., 57.
p-Cumenic acid, esters (BERT), A., 57.
ψ-Cumamol, *o*-amino-, acetyl derivative (v. AUWERS, BUNDESMANN, and WIENERS), A., 609.
ψ-Cumenoxycetic acid (STEINKOPF and HÜPNER), B., 624.
p-Cumenylglyoxylic acid, and its ethyl ester (BERT), A., 57.
 Cumyl chloride (BERT), A., 56.
 5-*ψ*-Cumyl acetate and chloroacetate (v. AUWERS, BUNDESMANN, and WIENERS), A., 609.
 2-*N*-*ψ*-Cumyl-2:3-acenaphthatriazole (CHARRIER and BERETTA), A., 308.
p-Cumylacetio acid, esters of (BERT), A., 285.
 2-*ψ*-Cumylazoacenaphthene, 3-amino- (CHARRIER and BERETTA), A., 308.
 Cuprene tar. See under Tar.
 Cupric salts. See under Copper.
 Cuprinitric-oxide, salts, constitution and absorption spectra of (MANCHOT and LINCKH), A., 452.
 2-Cupromercaptobenzoic acid, 4-amino-, preparation of (CHEM. FABR. FORM. SCHERING), (P.), B., 899.
 Cuprous salts. See under Copper.
Curcuma aromatica, essential oil from the rhizomes of (RAO, SHINTRE, and SIMONSEN), B., 1028.
 1-Cureumene, and its salts (RAO, SHINTRE, and SIMONSEN), B., 1028.
 Currants, black, juice of (FRANÇOIS and SEGUIN), B., 382, 510*.
 Curtain materials, "aktivin" in finishing of (FEIBELMANN), B., 484.
 Cyanamide, preparation of solutions of (GELHAAR), (P.), B., 77; (BRESLAUER and COMP. DE L'AZOTE ET DES FERTILISANTS S.A.), (P.), B., 805*.
 influence of neutral salts on the acid hydrolysis of (GRUBE and SCHMID), A., 474.
 behaviour of, in acid and alkaline solutions (GRUBE and MOTZ), A., 131.
 action of picryl chloride on (GIUA), A., 59.
 poisoning by. See under Poisoning.
 hydrochloride, preparation of (PINCK and HETHERINGTON), A., 825.
 Cyanates, Cyanic acid, and Cyanides. See under Cyanogen.
 Cyanilidin salts (KATAOKA), A., 1150.
 Cyanilin (KATAOKA), A., 1150.
 Cyanine dyes (MILLS and RAPER), A., 77.
 Cyanite, calcination of (FREED; HARRISON), B., 631.
 Cyano-compounds, aliphatic, reduction of (RUPE, METZGER, and VOGLER), A., 55.
 Cyanogen, preparation of (RICCA), A., 489.
 recovery of, from solutions (MILLS and CROWE), (P.), B., 17.
 spectrum of, in the afterglow of active nitrogen (JEVONS), A., 992.
 reactions of, under the influence of α -particles (LIND, BARDWELL, and PERRY), A., 770.
 liquid and solid, vapour pressure of (PERRY and BARDWELL), A., 117.
 explosion-wave in mixtures of, with oxygen and nitrogen (CAMPBELL and DIXON), A., 1213.
 preservation of (RICCA), A., 489.
 thio-. See Thiocyanogen.
 Cyanogen compounds, treatment of waste liquors containing (DENIS), (P.), B., 538.
 effect of, on flotation of pure sulphide minerals (TUCKER, GATES, and HEAD), B., 366.
 Cyanogen bromide, liquid, electrical conductivity of (GLOCKLER), A., 997.
 chloride, preparation of (HEUSER and AMER. CYANAMID CO.), (P.), B., 708.
 mixture, destruction of cockroaches with (RICE), B., 30.
 Hydrocyanic acid, manufacture of (DEUTS. GOLD- & SILBER-SCHNEIDANSTALT and LIEBKNECHT), (P.), B., 51; (EICHWALD), (P.), B., 273; (POINDEXTER and CALIFORNIA CYANIDE CO.), (P.), B., 583; (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 770; (BREDIG, ELÜD, and KOEPF & CO.), (P.), B., 1014*.
 and its salts, from calcium cyanamide (STICKSTOFFWERKE, FRANCK, and HELMANN), (P.), B., 125.
 from thiocyanic acid or its compounds (DU BOIS), (P.), B., 13*.
 for use as insecticide (CHEM. FABR. STOLTZENBERG), (P.), B., 379.
 preparation of carbon and (POINDEXTER and CALIFORNIA CYANIDE CO.), (P.), B., 88.
 catalytic production of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 488*.
 apparatus for production and recovery of (BROWN and PACIFIC R. & H. CHEMICAL CORP.), (P.), B., 405.
 purification of, from hydrogen sulphide (WALKER and PACIFIC R. & H. CHEMICAL CORP.), (P.), B., 360.
 and its *iso*-form, structure and boiling points of, and of their salts (ENKLAAR), A., 718.
 reactions of, under the influence of α -particles (LIND and BARDWELL), A., 770.
 specific heat of (INGOLD), A., 231; (PARTINGTON), A., 784.
 vapour pressure of (SINOZAKI, HARA, and MITSUKURI), A., 670.
 solid and liquid, vapour pressures of (PERRY and PORTER), A., 342.

Cyanogen:—

- Hydrocyanic acid, liquid, stabilisation of (BUCHANAN and AMER. CYANAMID Co.), (P.), B., 438; (WALKER and PACIFIC R. & H. CHEMICAL CORP.), (P.), B., 875.
determination of strength of, by specific gravity (WALKER and MARVIN), B., 271.
removal of, from gases (COULIER), (P.), B., 573.
disappearance of, in the reaction with aldehyde-ammonia (SANNIÉ), A., 276.
catalytic oxidation of (SINOZAKI and HARA), A., 1110.
oxidation of, by charcoal and chopped muscle (ELLINGER and LENZBERG), A., 863.
inhibition of oxidations by, and its reversal (BLASCHKO), A., 1012.
catalytic oxidation of ammonia and (ANDRUSSOV), A., 582.
action of chloroacetic acid, benzaldehyde, and (HENZE), A., 961.
additive compounds of metallic chlorides and (STOLTZENBERG), (P.), B., 583.
as fumigant (BUCHANAN and AMER. CYANAMID Co.), (P.), B., 726.
effect of, on alcoholic fermentation (WARBURG; NEUBERG and PERLMANN), A., 434.
toxicity of, towards cells (VOEGTLIN, JOHNSON, and DYER), A., 863.
destruction of vermin by means of (STOLTZENBERG), (P.), B., 614.
poisoning. See under Poisoning.
alkali salts, manufacture of (STOCKHOLMS SUPERFOSFAT FABR. and RAMSAY), (P.), B., 273; (HENE), (P.), B., 583; (METZGER and CALIFORNIA CYANIDE Co.), (P.), B., 743.
commercial, determination of chlorides in (BOCK), B., 582.
calcium salt, and its ammonia compound, preparation of (POINDEXTER and CALIFORNIA CYANIDE Co.), (P.), B., 946.
manufacture of (METZGER), B., 272; (METZGER and CALIFORNIA CYANIDE Co.), (P.), B., 486.
tricalcium salt (POINDEXTER and CALIFORNIA CYANIDE Co.), (P.), B., 822.
mercuric salt, equilibrium of formation of complexes of alkali halides with (BOURION and ROUYER), A., 1005.
potassium salt, action of, on oxides (PASSERINI), A., 726.
potassium double salts, isomorphism of (CAROZZI), A., 782.
sodium salt, thermal dissociation of (GUERNSEY and SHERMAN), A., 474.
fixation of nitrogen as (GUERNSEY, YEE, BRAHAM, and SHERMAN), B., 358.
detection of, by means of its catalytic action (DENIGÈS), A., 1222.
determination of, in gaseous mixtures (SEIL), B., 271.
Cyanidos, preparation of, from calcium cyanamide and dicyanodiamide (KRETOV), B., 1012.
manufacture of, from cyanamide salts (CARO and FRANK), (P.), B., 406.
manufacture of hydrocarbons and (CLANCY), (P.), B., 486.
preparation of solutions of (COOPER and AMER. CYANAMID Co.), (P.), B., 64.
purification of (COOPER and AMER. CYANAMID Co.), (P.), B., 980.
recovery of, from ammoniacal gas liquor (HEFFNER, TIDY, and RAINEY-WOOD PROCESS CORP.), (P.), B., 1004.
removal of liquid from (JACOBS and DU PONT DE NEMOURS & Co.), (P.), B., 743.
crude, treatment of (GLOVER, ROGERS, and DU PONT DE NEMOURS & Co.), (P.), B., 665.
action of ammonia solutions of selenium, tellurium, arsenic, and sulphur on (BERGSTROM), A., 1113.
Cyanic acid, hydrolysis of (FEARON and DOCKERAY), A., 506.
lead tetra-salt (KAUFMANN and KÖGLER), A., 370.
potassium salt (HENDRICKS and PAULINO), A., 113.
Cyanates, comparison of the physical properties of azides and, in blood (GOTTLIEB), A., 421.
Cyanoplatinic acid, basic uranium salt (LOBANOV), A., 372.
isoCyanuric acid, tri-*m*-nitrophenylester (BORSCHÉ and FRITZSCHE), A., 393.
Cyanuric chloride derivative (SOC. CHEM. IND. IN BASLE), (P.), B., 122*.
Cyclamin (DAFERT, GUND, MÜLLER, and NITSCHÉ), A., 1146.

- Cyclamiretin, and its derivatives (DAFERT, GUND, MÜLLER, and NITSCHÉ), A., 1146.
Cyclic bases, relative tenacity of (v. BRAUN, KÜHN, and GOLL), A., 1259.
Cyclic compounds, formation of, from halogenated open-chain compounds (HASSELL and INGOLD; GOSS and INGOLD), A., 820; (HUNTER), A., 1125.
influence of substituents on the formation and stability of (GIUA), A., 60.
infra-red absorption spectra of (LECOMTE), A., 884.
influence of hydrogen-ion concentration on ultra-violet absorption spectra of (STENSTRÖM and REINHARD), A., 10.
cis-trans-isomerism of (VAVON), A., 837.
with a *p*-bridge (HELLER), A., 286.
Cylinders, drying. See Drying cylinders.
p-Cymene, synthesis of (BERT), A., 56.
p-Cymene series, syntheses in (BERT), A., 56, 285.
Cypress pine, black. See *Callitris calcarata*.
Cypridina, inhibition of luminescence of (HARVEY), A., 1173.
Cyst, hydatid, enzymes of (CAMERON), A., 752.
Cysteine, preparation of, from cystine, and its optical activity (ANDREWS), A., 1027.
from hydrolysis of proteins (OKUDA), A., 1163.
oxidation of (KENDALL and NORD), A., 1129.
effect of iron on (TODA), A., 943.
detection of (SULLIVAN), A., 1266.
determination of (OKUDA), A., 190.
Cystine, solubility of (SANO), A., 345.
reduction of (ANDREWS), A., 1027.
lability of sulphur in derivatives of (BRAND and SANDBERG), A., 1278.
nutritive value of (WOODS), A., 197.
biological significance of (VOEGTLIN, JOHNSON, and DYER), A., 863.
replacement of, by taurine in diet (G. T. and H. B. LEWIS), A., 1056.
determination of (OKUDA), A., 190; (DEFAY), A., 1115.
determination of, by feeding experiments (SHERMAN and WOODS), A., 327.
determination of, colorimetrically, in proteins (LOONEY), A., 1050.
determination of, in urine (LEWIS and WILSON), A., 1068.
Cytochrome, and its derivatives (SCHUMM), A., 537.
in tumour tissues (BIERICH and ROSENBOHM), A., 860.
Cytosine, action of *Bacillus coli* on (HAIN and SCHÄFER), A., 203, 1062.

D.

- Dactylis glomerata*, pigment of *Melanargia galatea* in (THOMSON), A., 1168.
Daphn, constitution and synthesis of (LEONE), A., 75.
Dark field, illumination of (SIEDENTOPF), A., 142.
Datura stramonium, British Columbian, alkaloidal content of (CLARK and ORFORD), B., 689.
Datura alba, fatty oil from seeds of (DIETERLE), B., 372.
Daucus carota, essential oil of (ASAHINA and TSUKAMOTO), B., 339.
Decacyclene (DZIEWOŃSKI and POCHWAŃSKI), A., 279.
tribenzoyl derivative (DZIEWOŃSKI and RYCHLIK), A., 70.
Decacyclene, tri- and tetra-chloro- and mono-, di-, and tri-hydroxy- (DZIEWOŃSKI and POCHWAŃSKI), A., 279.
Decacyclenedisulphonic acid, hydroxy-, and its sodium salt (DZIEWOŃSKI and POCHWAŃSKI), A., 279.
Decacyclenesulphonic acid, dihydroxy-, and its salts (DZIEWOŃSKI and POCHWAŃSKI), A., 279.
Decacyclenetrisulphonic acid, and its salts (DZIEWOŃSKI and POCHWAŃSKI), A., 279.
Decahydronaphthalene (*decalin*), and its substitution derivatives (GYGIN), A., 389.
vapour pressures of mixtures with (WEISSENBERGER, HENKE, and SPERLING), A., 787.
mercury compound of (NEUMANN), (P.), B., 965.
Decahydronaphthalene, amino-, nitro-, and hydroxy-derivatives (NAMETKIN and MADAËV-SITSCHIEV), A., 508.
Decahydrophenanthrene, 9:10-dihydroxy-, and its diacetate (SKITA), A., 174.
trans-Decahydroisoquinoline, and its salts (HELPER), A., 1151.
Decahydroquinoliniumpiperidinium bromide (v. BRAUN and ZOBEL), A., 1150.

- Decamethylspermine, and its salts (DUDLEY and ROSENHEIM), A., 308.
- Decane, α - κ -dibromo- and -dicyano- (CHUIT), A., 499.
- Decane- α - κ -dicarboxylic acid, esters (CHUIT), A., 499.
- Decanol, α -bromo- (CHUIT), A., 499.
- cycloDecanone, and its semicarbazone (RUZICKA, STOLL, and SCHINZ), A., 615.
- Decan- γ -on- δ -ol, and its semicarbazone (NICOLLE), A., 383.
- Δ^2 -Decene, β -bromo- (JOHNSON and McEWEN), A., 495.
- Decoic acid, thallose salt (WALTER), A., 712.
- Decolorising agents (WOOSTER), (P.), B., 81*; (STEWART and SHELL CO. OF CALIFORNIA), (P.), B., 808.
- regeneration of (GURWITSCH), (P.), B., 650.
- for oils (KAUFFMAN and PRODUCERS & REFINERS CORP.), (P.), B., 575.
- Decolorising powders, spent, regeneration of (GURWITSCH), B., 348.
- Decoration of materials (PEARL), (P.), B., 786.
- 2-*n*-Decylcyclotelluripentane-3:5-dione 1:1-dichlorido (MORGAN), A., 188.
- 2-*n*-Decylcyclotelluripentane-3:5-dione (MORGAN), A., 188.
- Deflocculation of solids (ACHESON), (P.), B., 857, 1000*.
- Dehydration apparatus (IMRAY and INT. COMB. ENG. CORP.; GALLOWAY and STURTEVANT CO.; BOOKSH), (P.), B., 649.
- liquids (ZOE), (P.), B., 696.
- Dehydroanhydrolaudalinc-4-acetamido-3-methoxytoluene methiodide (ROBINSON and SHINODA), A., 1048.
- Dehydrodeoxycholic acid, methyl ester (BORSCHE and FRANK), A., 1140.
- Dehydrogenase. See Reductase.
- β -Dehydrodeoxycholic acid, and its methyl ester (WINDAUS), A., 723.
- Dehydrohydroxydinaphthylene oxide (PUMMERER and RIECHE), A., 1135.
- Dehydro-2:2'-dihydroxydi- α -naphthylmethane, constitution of supposed oxime of (DISCHENDORFER), A., 622.
- Dehydrophenyl-2:2'-dihydroxydi- α -naphthylmethane, and its oxime (DISCHENDORFER), A., 622.
- Dehydroquinine, action of arsenic trichloride on (ERBEN, PHILIPPI, SCHNIDERSCHITZ, SPORER, and DIAMANT), A., 188.
- Dehydrorosinomenine, and its salts and derivatives (GOTO), A., 1160.
- Dehydrothio-*o*-toluidine, derivatives of (YAMADA), A., 850.
- Dehydrothiotoluidine derivatives, affinity of, for cotton (RUGGLI and PESTALOZZI), B., 436.
- Dehydrothio-*o*-toluidinesulphonic acid, and its salts (YAMADA), A., 850.
- Deiodothyroxin, constitution and synthesis of (HARRINGTON), A., 724.
- Delphinidin chloride 3-methyl ether (GATEWOOD and ROBINSON), A., 1043.
- De-*N*-methylcorybulbine ethyl ether, and its derivatives (GADAMER and SAWAI), A., 1161.
- Denitrification in oxidising media (PARISI), B., 641, 762.
- Densimeters, mobile-scale (SETTIMI), B., 105.
- Density (*specific gravity*), determination of, with the density balance (STOCK and RITTER), A., 669.
- determination of, by the falling drop method (BARBOUR and HAMILTON), A., 1198.
- measurements of, at high temperatures (SAUERWALD), A., 786; (SAUERWALD and VIDAUSKI), A., 999; (SAUERWALD and WECKER), B., 131.
- relation between temperature, pressure, and (PICKERING), A., 569.
- in relation to viscosity (DUBIEF), A., 464.
- of fused chlorides (KLEMM and ROCKSTROM), A., 669.
- of fused salts (KLEMM), A., 670.
- of gases (BLANCHARD and PICKERING), A., 999.
- of hydrides (SIEVERTS and GOTTA), A., 340.
- of liquids, apparatus for determination of (TRENITÉ), B., 935.
- variation of, with temperature (PREDVODITELEV), A., 669; (BATSCHINSKI and SCHAPOSCHNIKOV), A., 999.
- in relation to molecular diameter (SHAXBY), A., 458.
- of molecular compounds (SKRAUP and EISEMANN), A., 999.
- of organic compounds (HERZ), A., 117.
- of solids, gas volume-meter for (KARNS), A., 707.
- orthobaric (HORIUCHI), A., 1195.
- Dental alloys. See under Alloys.
- filling material (KRUGER), (P.), B., 609.
- alloDeoxybenzoin-*o*-carboxylic acids (WEISS and SAUERMAN), A., 294.
- Deoxybiliaric acid, formation of, from biliaric acid (KARASAWA), A., 401.
- isoDeoxybiliaric acid, formation of, from deoxycholic acid (KARASAWA), A., 401.
- Deoxycaffeine, preparation of (FICHTER and KERN), A., 531.
- Deoxycholic acid, formation of, from isobiliaric acid (KARASAWA), A., 401.
- methyl ester (BORSCHE and FRANK), A., 1140.
- Deoxydihydromorphinic acid, and its esters and derivatives, and chloro-, methyl ester, and its picrate (SPEYER and POPP), A., 532.
- Deoxyhumulic acid (WIELAND and MARTZ), A., 1249.
- Deoxyoctahydrodianhydrostrophanthidin (WINDAUS, REVEREY, and SCHWIEGER), A., 73.
- Deoxyprolithobiliaric acid, and its methyl ester (WINDAUS), A., 724.
- Deoxytetrahydro- α -methylmorphimethine perchlorate (CAHN), A., 1264.
- Deoxytheobromine, preparation of (FICHTER and KERN), A., 531.
- Deplegmators (HANCOCK), (P.), B., 114; (EGLOFF, BENNER, and MINERAL OIL PRODUCTS CO.), (P.), B., 567.
- Derris species, insecticides from (NETTAI SANGYO KABUSHIKI KAISHA), (P.), B., 843.
- liquid insecticide from (ZAIDAN HOJIN RIKAGAKU KENKYUJO), (P.), B., 614.
- insecticidal value of (GATER), B., 71.
- Desiccants, imparting a large superficial area to (DEUTS. GASÖLÜHLICHT-AUER-GES.), (P.), B., 856.
- Dessication of organic substances (TIVAL and DESCOMBES), (P.), B., 26.
- Des-*N*-methyl-4-methyltetrahydroberberine (v. BRUCHHAUSEN), A., 184.
- Desminite, vapour pressure of (CHROBAK), A., 798.
- Detergents, manufacture of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 202.
- Detonating compositions, manufacture of (RATHSBURG), (P.), B., 468*.
- Detonation wave (LAFFITTE), B., 110.
- Detonators (BROWNSDON, and NOBEL'S EXPLOSIVES CO.), (P.), B., 142.
- direct method for testing (WÖHLER), B., 773.
- priming compositions for (v. HERZ), (P.), B., 966.
- Developers. See Photographic developers.
- Dewindtite, and its comparison with dumontito (SCHOEP), A., 379.
- Dextrin, formation of, from starch (CHRSZASZCZ, BIDZINSKI, and KRAUSE), A., 93.
- hydrolysis of, by takadiastase (MASLOW and DAVISON), A., 757.
- Dextrins, synthetic, constitution of (IRVINE and OLDHAM), A., 153.
- Dextrose (*d-glucose*; *grape-sugar*), structure of (CHARLTON, HAWORTH, and PEAT), A., 273; (HIRST), A., 385; (LEVENE and SMMS), A., 1025.
- and its derivatives, ring structure of (HUDSON), A., 714; (OHLE and SPENCER), A., 1126.
- manufacture of (NEWKIRK and INT. PATENTS DEVELOPMENT CO.), (P.), B., 294.
- from starch (WIDMER and PENICK & FORD), (P.), B., 561.
- mutarotation of (v. EULER and ÖLANDER), A., 580.
- reaction velocity and equilibrium of mutarotation of (v. EULER and HEDSTRÖM), A., 714.
- effect of muscle tissue and insulin on the rotation of (BARBOUR; MURLIN), A., 435; (PAUL), A., 869; (BEARD and JERSEY), A., 1180.
- activity of the fourth hydroxyl group of (SCHLUBACH and FIRGAU), A., 1126.
- oxidation of (EVANS, BUEHLER, LOOKER, CRAWFORD, and HOLL), A., 148; (JENSEN and UPSON), A., 149; (POWER and UPSON), A., 274.
- in presence of sodium ferropyrophosphate (SPOEHR and SMITH), A., 385.
- with hydrogen peroxide, in presence of phosphates and butyric acid (WITZEMANN), A., 270.
- in health and diabetes (AMBARD, SCHMID, and ARNOVLJEVITCH), A., 325.
- deamination with regard to oxidation of (SPEAKMAN), A., 1177.
- methylation of (HAWORTH and SEDGWICK), A., 1223.
- action of amino-acids on (v. EULER, BRUNIS, and JOSEPHSON), A., 822.

- Dextrose, action of aniline on, in acetic acid solution (CAMERON), A., 1026, 1226.
 action of glycine on (v. EULER and JOSEPHSON), A., 714; (v. EULER and BRUNIS), A., 940.
 fate of, disappearing under the action of insulin (BEST, HOET, and MARKS; BEST, DALE, HOET, and MARKS), A., 870.
 effect of insulin and liver tissue on (LUNDGAARD and HOLBOLL), A., 644, 861.
 action of insulin and muscle tissue on (ANDERSON and CARRUTHERS), A., 861; (LUNDGAARD and HOLBOLL), A., 1171.
 effect of, on colloidal equilibria of lipins (NECHKOVITCH), A., 537.
 condensation of *p*-phenetidine and (AMADORI), A., 60.
 effect of piperazines on fermentation of, by yeast (ABDERHALDEN), A., 544.
 action of potassium hydroxide on (EVANS, EDGAR, and HOFF), A., 1228.
 reducing properties of mixtures of proteins with (BORSOOK and WASTENEYS), A., 313.
 action of disodium phosphate on (SPOEHR and WILBUR), A., 1126.
 action of, on zirconium chloride solutions (BRITTON), A., 586.
 bacterial decomposition of (AUBEL), A., 1277.
 degradation of, by blood-corpuscles (IRVING), A., 854.
 content of, in human red corpuscles (TEDESCO), A., 65.
 disappearance of, from blood (DU VIGNEAUD and KARR), A., 192.
 effect of intravenous injection of (BOYD, HINES, and LEESE), A., 861.
 assimilation of, in fasting and on protein-fat diet (NAGASAYE), A., 1055.
 hydrate (NEWKIRK and INTERNAT. PATENTS DEVELOPMENT Co.), (P.), B., 72.
 hydrazones and osazones of (VOTOČEK, ETTTEL, and KOPPOVA), A., 501.
 determination of (ROSENTHALER), A., 327; (VISSCHER), A., 984.
 determination of, in biological material (HOLDEN), A., 764.
 γ-Dextrose, and its penta-acetate (PRINGSHEIM and KOLODNY), A., 822.
 Diabase, finely-crushed, production of (HACK and BURT), (P.), B., 55.
 Diabetes (*glycosuria*), preparation of a remedy for (BURMANN), (P.), B., 965.
 genesis of (MURLIN), A., 435.
 effect of muscular exercise on metabolism in (HETZEL and LONG), A., 425.
 acid-base equilibrium of serum in (PETERS, BULGER, EISENMANN, and LEE), A., 636.
 effect of excretion of acids and bases on acidosis in (HENDRIX, FAY, CALVIN, and BODANSKY), A., 1053.
 calcium in blood in (KYLIN), A., 1169.
 effect of cobalt and nickel salts in (BERTRAND and MACHEBEUF; RATHERY and LEVINA), A., 971.
 utilisation of glucosone in (THANNHAUSER and JENKE), A., 317.
 hexosophosphoric acid in blood in (LAWACZECK), A., 752.
 protein-fat ratio in blood in (CHRISTENSEN), A., 637.
 effect of proteins on excretion of ketonic substances in (THANNHAUSER and MARKOWICZ), A., 859.
 insulin content of pancreas in (POLLAK), A., 1054.
 sugar in blood in (GLASSMANN), A., 1169.
 adrenaline, excretion of carbon and nitrogen in urine in (WADA), A., 753.
 pancreatic, protein metabolism in (v. FALKENHAUSEN), A., 89.
 phloridzin, and insulin (GAEBLER and MURLIN; NASIR), A., 436.
 Diacenaphthylidene, and its picrate (DZIEWOŃSKI and LITYŃSKI), A., 160.
 Diacenaphthylidenedione (DZIEWOŃSKI and LITYŃSKI), A., 160.
 Diacenaphthylidenone (DZIEWOŃSKI and LITYŃSKI), A., 160.
 Diacene. See Diacenaphthylidene.
 Diacetomethylenediamide, benzoylation of (KNUDSEN), A., 506.
 Diacetoneglucose. See Glucose diisopropylidene ether.
 Diacetophenonethiocarbohydrazone, sodium derivative of (STEPHEN and WILSON), A., 1262.
 ω-4-Diacetoxyacetophenone (NOLAN, PRATT, and ROBINSON), A., 1043.
 2:6-Diacetoxymercuri-*p*-isoamylphenol (HENRY and SHARP), A., 1162.
 2:6-Diacetoxymercuri-*p*-*tert*-butylphenol (HENRY and SHARP), A., 1162.
 4:6-Diacetoxymercuricarvacrol (HENRY and SHARP), A., 1162.
 3:5-Di(acetoxymercuri)-4-nitro-*o*-cresol (ABBOTT LABORATORIES and RAIZISS), (P.), B., 995.
 ω-4-Diacetoxy-3-methoxyacetophenone (NOLAN, PRATT, and ROBINSON), A., 1043.
 7:4'-Diacetoxy-2-methylisoflavone, 5-hydroxy- (BAKER and ROBINSON), A., 1253.
 Di-(3-acetyl-2:4-dimethylpyrrol)-3:5-dicarboethoxy-4-methyl-2-pyrrolmethane (FISCHER and ERNST), A., 622.
 OO-Diacetyldiphenolisatin, manufacture of (HOFFMANN-LA ROCHE & Co.), (P.), B., 186.
 Diacetylene. See Butadi-1-ene.
 Diacetylmethane, nitroso-, cobaltous salt (KÜSTER, ERFLE, v. ROLL, and SCHILLER), A., 821.
 Diacetylmoximethiocarbohydrazone (GUHA and DEY), A., 417.
 Diacetylpropanetetra-carboxylic acid, ethyl ester (GAULT and KLEES), A., 938.
 2:4-Diacetylresorcinol (WITTIG, BANGERT, and RICHTER), A., 301.
 Diacetylsuccinic acid, ethyl ester, absorption spectra of (MORTON and ROGERS), A., 454.
 Diacyl peroxides, velocity of hydrolysis of acid anhydrides and (BÖSEKEN and GELISSEN), A., 166.
 unsymmetrical, thermal decomposition of (FICHTER and ERLÉNMEYER), A., 400.
 Diacylacyldiamino-compounds, aromatic (CHEM. FABR. GRIEHEIM-ELEKTRON), (P.), B., 435*.
 Diacylanilides, conversion of, into acylamino-ketones (CHAPMAN), A., 161.
 Dialanyl-*l*-cystine, dianhydride of, and its reactions (BERGMANN and STÄTHER), A., 631.
 1:4-Dialanyldiglycyl-2:5-dimethylpiperazine, and its hydrobromide (ABDERHALDEN and KOHL-EGGER), A., 1047.
 1:4-Dialanyldileucyl-2:5-dimethylpiperazine, and its hydrobromide (ABDERHALDEN and KOHL-EGGER), A., 1047.
 2:4-Dialdehydobenzoic acid, and its derivatives (PERKIN and STONE), A., 64.
 Di-(5-aldehydo-4-methyl-2-pyrrol)ethane-3:3'-dicarboxylic acid, ethyl ester (FISCHER and HALBIG), A., 621.
 Di-(5-aldehydo-4-methyl-2-pyrrol)methane-3:3'-dicarboxylic acid, ethyl ester, and derivatives (FISCHER and HALBIG), A., 621.
 α-Dialdehydo-*n*-pentadecane-α'-carboxylic acid, ammonium salt, and methyl ester, oximes (SHRINER and ADAMS), A., 47.
 Dialkyl selenides and tellurides (HOCHWALT and GEN. MOTORS CORP.), (P.), B., 513.
 Dialkylacetic acids, preparation of (LEVENE and BASS), A., 1226.
 Dialkylamides, aliphatic, action of magnesium organic compounds on (MONTAGNE), A., 942.
N-Dialkylamides, action of magnesium organic compounds on (MAXIM), A., 837.
 Dialkylaminoethanol esters, ethers of, preparation of (SCHOELLER), (P.), B., 465.
 Dialkylanilines, nitroso-, dyes from (COBENZL), B., 656.
 5:5-Dialkylbarbituric acids, manufacture of (THORP and LAMBERT THORP Co.), (P.), B., 514.
 Dialkylbarbituric acids, action of mercuric salts on (FLEURY), A., 305, 420.
 Dialkylmethyl groups, structure of (STEOPOE), A., 944.
 Dialkylquinones, dihydroxy-, Fichter's synthesis of (KÖGL and LANG), A., 729.
 β-Dialylamino-*n*-propyl alcohol, and its *p*-aminobenzoate hydrochloride (ADAMS, DREGER, VOLWILER, and ABBOTT LABORATORIES), (P.), B., 851.
 Diallylbarbituric acid, compound of, and 4-dimethylamino-1-phenyl-2:3-dimethyl-5-pyrazolone (CHEMISCHE FABRIK VORM. SCHERING), (P.), B., 692*.
 Dialyser, rapid, for clinical purposes (GUTHRIE and OTTENSTEIN), A., 647.
 Dialysis, influence of hydrogen-ion concentration on velocity of (MOMMSEN), A., 240.
 pore diameter of separating surface in (MÜLHAUS), B., 615.
 and ultra-filtration (HEYMANN), A., 31; (REINBOLDT), A., 120.
 apparatus for (HÄNKE and KOESSLER), A., 377.
 nitrocellulose membranes for (LOONEY and KOBER), (P.), B., 392.
 rapid (FABRE and PENAU), A., 791.
 Diamidodi-iminodisilane (SCHWARZ and SEXAUER), A., 369.

- Diamines, preparation of (PUTOCHIN), A., 602.
 aliphatic, pharmacological activity of (v. BRAUN, GOLL, and METZ), A., 1232.
 aromatic, dissociation constants of (KUHN and ZUMSTEIN), A., 513.
- Diamond, specific heat of (MAGNUS and HODLER), A., 998.
 hardness of (EPPLER and ROSE), A., 665.
 decolorisation of (WOLFRUM), (P.), B., 238.
 spectroscopic analysis of (WILD and KLEMM), A., 708.
- Di-*n*-amylamine, and its salts (RUPE, METZGER, and VOGLER), A., 55.
- Diisoamylamine, α -naphthylcarbamide from (FRENCH and WIRTEL), A., 830.
- 1:4-Diamyl- ϵ -aminoamylpiperazine, di- ϵ -amino-, and its salts and derivatives (v. BRAUN, GOLL, and METZ), A., 1233.
- 2-Diisoamylamino-1-isoamylpyridinium iodide (MAGIDSON and MENSCHIKOV), A., 845.
- α -Diisoamylaminopropionic acid, ethyl ester (v. BRAUN, LEISTNER, and MÜNCH), A., 1128.
- 2-Diisoamylaminopyridine, and its salts (MAGIDSON and MENSCHIKOV), A., 845.
- 2-Diisoamylaminopyridinium methiodide (MAGIDSON and MENSCHIKOV), A., 845.
- Diisoamylidixanthylethane (CONANT and SMALL), A., 158.
- 1:3-Diisoamylcyclopentane (WIELAND and MARTZ), A., 1249.
- Diamylpiperazine, ϵ -amino-, and its dibenzoyl derivative and their hydrochlorides (v. BRAUN, GOLL, and ZOBEL), A., 739.
- Dianhydro-6-aminopiperonal dihydrohydroxycodone (GULLAND and ROBINSON), A., 83.
- Dianhydrobitalgenin, and its acetyl derivative (CLOETTA), A., 755.
- Dianhydrostrophanthidin, oxidation products of (JACOBS and COLLINS), A., 73.
- 2:5-Dianilino-6-trichlorophenoxybenzoquinone (HUNTER and MORSE), A., 839.
- 9:10-Dianilino-9:10-dihydroanthracene, 1:4-dichloro- (BARNETT, MATTHEWS, and WILTSHIRE), A., 1030.
- 4:4'-Dianilinodiphenyl, 3:3'-dinitro- (LE FÈVRE and TURNER), A., 1029.
- 3:3-Dianilino-2-keto-2:3-dihydropyriminazole (REINDEL and ROSENDAHL), A., 743.
- 3:5-Dianilino-4:1:2-thiadiazole, and its derivatives (FROMM), A., 717.
- 3:5-Dianilinotoluene, 2:4-dinitro- (BORSCHKE and TRAUTNER), A., 390.
- α -Di-*o*-anisolesulphonylacetone (TRÖGER and PAHLE), A., 524.
- 3:2-Di-*o*-anisolesulphonylmethylquinoline (TRÖGER and PAHLE), A., 524.
- 4:6-Di-*p*-anisyl-2-*o*-hydroxy-*p*-anisylpyridine (DILTHEY, FRÖDE, and KOENEN), A., 1254.
- 4:6-Di-*p*-anisyl-2-*o*-hydroxy-*p*-anisylpyrylium salts and derivatives (DILTHEY, FRÖDE, and KOENEN), A., 1254.
- Dianisylidenecyclohexylidenecyclohexanone (KUNZE), A., 1143.
- Di-*p*-anisyltelluridichloride (MORGAN and KELLET), A., 747.
- Dianthraquinonylamine dyes, hydroxy- (MIEG, RAEDER, and GRASSELLI DYESTUFF CORP.), (P.), B., 233.
- 1:1'-Dianthraquinonylamine, sulphonic acids of, and 4:4'-dibromo- (FARB. VORM. BAYER & Co.), B., 973.
- 1:1'-Dianthraquinonyl-2:2'-dialdehyde, 4:4'-dichloro- (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 658.
- Dianthrimes, amino-, preparation of (BRITISH DYESTUFFS CORP., BUNBURY, and ROBINSON), (P.), B., 398.
- 9:8'-Dianthrone, 1:8:1':8'-tetrachloro- (BARNETT, COOK, and MATTHEWS), A., 295.
- Dianthus caryophyllus* (carnation), oil from (TREFF, RITTER, and WITTRISCH), B., 850.
- Diantipryl selenide (KAUFMANN and KÖGLER), A., 369.
- Diaquobisethylenediamminocupric iodide (MORGAN and BURSTALL), A., 1027.
- Di-*l*-arabinosecarbamide, and its hexabenzoyl derivative (HELFERICH and KOSCHE), A., 273.
- Diarylamines, manufacture of (SOC. CHEM. IND. in BASLE), (P.), B., 528.
- Diarylcarbamides, diamino-, and their derivatives, production of (I. G. FARBERIND.), (P.), B., 769.
- Diaryldialkylmethanes, diamino-, manufacture of (HOMOLKA and GRASSELLI DYESTUFF CORP.), (P.), B., 703*.
- Diarylguanidines, manufacture of (BRITISH DYESTUFFS CORP., CRONSHAW, and NAUNTON), (P.), B., 769.
- s*-Diarylguanidines, production of (SILESIA VEREIN CHEM. FABR.), B., 996.
- Diastase (SYNIEVSKI), A., 93.
 action of light on (PINCUSSEN), A., 757.
 adsorption of (UNNA), A., 976.
 of milk (CHRSZASZCZ and GORALOWNA), A., 321.
 effect of thiocyanate on (BITTORF and v. FALKENHAUSEN), A., 1058.
 in urine in daytime (COHEN), A., 636.
 determination of, in malt extract (SEELIGMANN), B., 25.
 determination of, in physiological fluids (LORBER), A., 212.
- 1:2-Diazines, formation of, by action of hydrazine on α , β -diketones (KORSCHUN and ROLL), A., 1154.
- Diazoaminobenzene, rearrangement of, and its salts (SUZU and YOKOZIMA), A., 831.
- Diazoaminobenzene, 3:3'-dinitro- (HOUSTON and JOHNSON), A., 164.
- o*-Diazoanisolepiperide (HOLMES and INGOLD), A., 831.
- p*-Diazobenzenesulphonazide (CURTIUS and STOLL), A., 393.
- cis*- and *trans*-Diazocamphonic acids, methyl esters (KENDALL and NOYES), A., 1134.
- Diazo-compounds, preparation of (HARRIS and ELIAS), (P.), B., 578.
 constitution and formation of (BLUMBERGER), A., 394.
 decomposition of, in presence of copper (BLUMBERGER), A., 164.
 development of images from (KALLE & Co.), (P.), B., 300.
 optically active (KENDALL and NOYES), A., 1134.
 solid stable (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 234*.
- Diazo-dyes, black, for cotton (CHEM. FABR. GRIESHEIM-ELEKTRO), (P.), B., 816.
- Diazo-hydrates, relation of azoxy-compounds to (ANGELI), A., 947.
- Diazomalon-*p*-aminobenzenesulphonylamic acid, and its acetyl derivative, ethyl esters (CURTIUS and STOLL), A., 393.
- Diazomalonbenzylsulphonylamic acid, and its ethyl ester (CURTIUS and JEREMIAS), A., 415, 416.
- Diazomalon-*p*-toluenesulphonylamic acid (CURTIUS and KLAVERN), A., 415.
- Diazomethane, action of, on cellulose (NIERENSTEIN), A., 154.
- iso*Diazomethanes, substituted (CHATTAWAY and WALKER), A., 169.
- 4-Diazomethylaminodiphenyl (BELL, KENYON, and ROBINSON), A., 830.
- Diazonium hydroxides, action of ethyl acetoxyruvate on (FAVREL and JEAN), A., 48.
 salts, heterocyclic, velocity of decomposition of (REILLY and MADDEN), A., 181.
- 6-Diazophenol-4-sulphonic acid, 2-chloro- (RODIONOV, MATWEEV, and "ANILTRUST"), (P.), B., 867.
- Diazophenolsulphonic acids, preparation of, and their nuclear substituted derivatives (RODIONOV, MATWEEV, and "ANILTRUST"), (P.), B., 867.
- 5-Diazo-3-propyl-1:2:4-triazoles, chloroaurates of (REILLY and DRUMM), A., 962.
- iso*Dibenzanthrones (THOMSON, THOMAS, and SCOTTISH DYES, LTD.), (P.), B., 868.
 manufacture of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 780.
- Dibenzanthrone dyes (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 311, 659*.
 vat (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 480*;
 (ROGERS, DANIELS, and NAT. ANILINE & CHEMICAL Co.), (P.), B., 576.
 grey to black vat (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 577.
- Dibenzanthrone dyes, hydroxy- (FARB. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 234.
- 3:4-Dibenzanthronyl, and 8- and 9-chloro- (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 781.
- 3:2-Dibenzenesulphonylmethylquinoline, 3:2-di-*p*-bromo- (TRÖGER and PAHLE), A., 524.
- Dibenzhydroxamic acid (FROMM), A., 717.
- 2:2'-Dibenzhydryldiphenyl (TSCHITSCHIBABIN and SERGEIEV), A., 610.
- s*-Dibenzhydrylphenylcarbamides (JONES and ROOT), A., 280.
- Dibenzidinedithiocarbamide, and its diacetyl derivative (PINTO), B., 43.
- 2:3:6:7-Dibenzo-4:5-dihydro-1:4:5-heptatriazine (GUHA and DE), A., 743.

- 2:3:7:8-Dibenzo-1:5:6-octatriazine, and its hydrochloride (GUHA and DE), A., 743.
- spiro*-Dibenzopyrans (DILTHEY, BERRES, HÖLTERHOFF, and WÜBKEN), A., 1254.
- Dibenzoyl*leucocibin*-yellow (POSNER and HOFMEISTER), A., 1156.
- 9:10-Dibenzoyl-9:10-dihydroanthracene (COOK), A., 953.
- O*-Dibenzoyldihydroindirubin (POSNER, STOCKENSCHNEIDER, NEUMANN, NACHRING, MEYER, and BEISSNER), A., 1156.
- 1:2-Dibenzoyl-3:4-*di-p*-methoxyphenylcyclobutane (STOBBE and HENSEL), A., 1248.
- OO'*-Dibenzoyl-5:5'-dimethyldihydroindigotin (POSNER, STOCKENSCHNEIDER, NEUMANN, NACHRING, MEYER, and BEISSNER), A., 1155.
- NN'*-Dibenzoyl-5:5'-dimethylindigotin (POSNER, STOCKENSCHNEIDER, NEUMANN, NACHRING, MEYER, and BEISSNER), A., 1155.
- Dibenzoyldinaphthylmethiophen (DZIEWOŃSKI and RYCHLIK), A., 70.
- $\alpha\delta$ -Dibenzoyl- $\beta\gamma$ -diphenylbutane, and its isomeride, bromides of (CONANT and CUTTER), A., 616.
- Dibenzoyldiphenylcarbazone (BAMBERGER, PADOVA, and ORMEROD), A., 416.
- NN'*-Dibenzoylindigotin, and *di-p*-nitro- (POSNER, STOCKENSCHNEIDER, NEUMANN, NACHRING, MEYER, and BEISSNER), A., 1155.
- Dibenzoylmethanes, substituted, hydrolytic fission of (BRADLEY and ROBINSON), A., 1145.
- Dibenzoylmethylisotetrazine (STOLLÉ), A., 1158.
- Dibenzoylphenylhydroxyglyoxime, structure of (PONZIO), A., 1159.
- Dibenzoyl- α -tartaric acid, salts and derivatives of (ZETZSCHE and HUBACHER), A., 598.
- Dibenzoyl- α -tartronic acid, aniline salt (ZETZSCHE and HUBACHER), A., 598.
- 10:10'-Dibenzoyl-9:9':10:10'-tetrahydro-9:9-dianthranyl, and its diacetate (COOK), A., 953.
- Dibenzopyrenequinones, halogenated, preparation of (I. G. FARBEN-IND.), (P.), B., 868.
- Dibenzyl. See *s*-Diphenylethane.
- Dibenzylacetylhydrazide (MAXIM), A., 837.
- Dibenzylacetic acid, and its substituted amides (MAXIM), A., 950.
- methyl ester (HILL), A., 835.
- Dibenzylacetoacetic acid, ethyl ester, reduction of (HILL), A., 835.
- as*-Dibenzylacetone (MILLS and AKERS), A., 77.
- Dibenzylamine, infra-red absorption spectrum of (BELL), A., 453.
- Dibenzylamine, *di-o*-hydroxy- (RUPE and METZGER), A., 65.
- 2-Dibenzylamino-8-methoxy-3-phenylquinoline (TRÖGER and GERO), A., 1045.
- 2-Dibenzylamino-3-*p*-toluenesulphonylquinoline (TRÖGER and UNGAR), A., 524.
- Dibenzylbenzylidenephthalan (WEISS, GROBSTEIN, and SAUER-MANN), A., 401.
- $\alpha\alpha$ -Dibenzyl- β -isobutylethanol, β -amino- (BETZIECHE and EHRLICH), A., 1234.
- Dibenzylidimethylammonium picrate (GOSS, INGOLD, and WILSON), A., 1133.
- 1:1'-Dibenzyl-4:4'-dipyridinium, action of, on its di-iodide (WEITZ and FISCHER), A., 527.
- Dibenzylidixanylethane, *di-p*-chloro- (CONANT and SMALL), A., 158.
- $\alpha\beta$ -Dibenzylethane, *di-o*-cyano- (FUSON), A., 604.
- $\alpha\alpha$ -Dibenzylethanol, β -amino-, deamination of (BETZIECHE and EHRLICH), A., 155.
- s*-Di- α -benzylthylcarbamido (JONES and WALLIS), A., 280.
- Dibenzylhydrazine, *di*-3:5-dibromo-2-hydroxy- (KOHN and ROSENFELD), A., 282.
- Dibenzylidene-3:3'-diamino-4:4'-dihydroxyarsenobenzene, 2:3:4-*tri*-hydroxy- (CHRISTIANSEN), A., 725.
- diantimonyl compound of (CHRISTIANSEN), A., 723.
- Dibenzylidene-erythritol, *di-o*-nitro-, photochemical transformation of (I. and H. TANASESCU), A., 726.
- Dibenzylidenecyclohexanone, *di-p*-amino-, perchlorates (DILTHEY and BERRES), A., 728.
- Dibenzylidenecyclohexylidenecyclohexanone (KUNZE), A., 1143.
- Dibenzylidenephthalan (WEISS, GROBSTEIN, and SAUERMAN), A., 401.
- Dibenzylidenethiodiglycolic anhydride (STOBBE, LJUNGREN, and FREYBERG), A., 403.
- Dibenzylmethyl glycol. See α -Phenyl- β -benzylbutane- $\beta\gamma$ -diol.
- Dibenzyl-2-methylquinoline, and its methiodide (MILLS and AKERS), A., 77.
- Dibenzyl-2-methylquinoline ethiodide (MILLS and RAPER), A., 78.
- 6:7-Dibenzoyloxy-2-methyl-3:4-dihydroisoquinolinium iodide (AKABORI), A., 957.
- NN*-Dibenzyl-*p*-phenylenediamine (RIEDEL A.-G.), (P.), B., 771.
- $\alpha\alpha$ -Dibenzyl- β -phenylethylene oxide (TIFFENEAU and LÉVY), A., 383.
- Dibenzyl-*o*-toluidine (COURTOT and PETITCOLAS), A., 607.
- Diborane, structure of (MARK and POHLAND), A., 227.
- $\alpha\beta$ -Dibromo-compounds, action of inorganic iodides on (VAN DUIN), A., 612.
- Di-(3-bromo-2:4-dimethylpyrryl)metheno (FISCHER and ERNST), A., 621.
- Dibutylamine, *di*- δ -amino-, and its dibenzoyl derivative, and their salts (DUDLEY and THORPE), A., 53.
- Diisobutylamine, α -naphthylcarbamido from (FRENCH and WITTEL), A., 830.
- 2-Diisobutylamine-1:8:8-trinitronaphthalene (VAN DER KAM), A., 1240.
- β -Di-*n*-butylamino-*n*-propyl alcohol, and its *p*-aminobenzoate hydrochloride (ADAMS, DREGER, VOLWILER, and ABBOTT LABORATORIES), (P.), B., 851.
- Dibutyldixanths, and their peroxides (CONANT, SMALL, and SLOAN), A., 842.
- Di-*n*-butyl-*n*-heptylamine (HAGER and MARVEL), A., 1232.
- Diisobutylhydrazine. See *Hydrazoisobutane*.
- Diisobutylideneazine, hydrogenation of (TAIPALE), A., 157.
- $\alpha\beta$ -Diisobutyl- δ -phenylsemicarbazide and - δ -phenylthiosomicarbazide (TAIPALE), A., 157.
- 1:4-Dibutylpiperazine, *di*- δ -amino-, and its benzoyl derivative, and their salts (v. BRAUN, GOLL, and METZ), A., 1233.
- Dibutylresorcinol (KLARMANN), A., 1135.
- Dibutylresorcinol (KLARMANN), A., 1135.
- Dicarbanilyldiisobutylhydrazine (TAIPALE), A., 157.
- Dicarbethoxy peroxide (WIELAND, VOM HOVE, and BÖRNER), A., 62.
- Di-*p*-carbethoxyaminophenyl disulphide and disulphoxide (CHILD and SMILES), A., 1243.
- [Di-(3-carbethoxy-2:4-dimethylpyrryl)]-3-bromo-5-carbethoxy-4-methyl-2-pyrrylmethane (FISCHER and ERNST), A., 622.
- [Di-(5-carbethoxy-2:4-dimethylpyrryl)]-3:5-dicarbethoxy-4-methyl-2-pyrrylmethane (FISCHER and ERNST), A., 622.
- Di-(3-carbethoxy-2:4-dimethylpyrryl)-diphenyl- and -phenyl-methyl-methanes (FISCHER and SCHUBERT), A., 737.
- Dicarbethoxyethylisocarbamide (BASTERFIELD and PAYNTER), A., 1027.
- Dicarbethoxyguanidine (BASTERFIELD and PAYNTER), A., 1027.
- Di-(3-carbethoxy-2-methylpyrryl)arylmethanes (FISCHER and SCHUBERT), A., 737.
- 3:5-Dicarbethoxy-4-methyl-2-pyrrylcarbinol (FISCHER and ERNST), A., 622.
- 3:5-Dicarbethoxy-4-methyl-2-pyrrylcarbinyl acetate (FISCHER and HALBIG), A., 621.
- Di-(3-carbethoxy-2-methylpyrryl)-*p*-dimethylamino-alkyl- and -aryl-methanes (FISCHER and SCHUBERT), A., 737.
- Di-5-(3-carbethoxy-2-methylpyrryl)methane, and *di*-4-bromo-, and its salts (FISCHER and SCHUBERT), A., 736.
- 2- α -Dicarbethoxyvinylpyrrole (FISCHER and SCHUBERT), A., 737.
- Di-*p*-carbomethoxyaminophenyl disulphoxide (CHILD and SMILES), A., 1243.
- Dicarbomethoxyarabinose carbonate (HAWORTH and MAW), A., 940.
- 3:5-Dicarbomethoxygallaldehyde, and its *p*-nitrophenylhydrazono (ROSENMUND and BOEHM), A., 1136.
- 3:4-Dicarbomethoxydihydroxybenzyl alcohol, and its derivatives (ROSENMUND and BOEHM), A., 1136.
- Di-4-carbomethoxy-2-hydroxynaphthyl sulphide, and its derivatives (LESSER and GAD), A., 168.
- Dicarbomethoxyprotocatechualdehyde, and its *p*-nitrophenylhydrazono (ROSENMUND and BOEHM), A., 1136.
- 4:4'-Dicarboxy-3:3'-dimethyldibenzyl ether (PERKIN and STONE), A., 64.
- Dicarboxycyclopentenylmalonic acid, ethyl ester (INGOLD, SHOPPEE, and THORPE), A., 939.
- 2:3-Dicarboxyphenylarsinic acid, and its anhydride and tri-sodium salt (HAMILTON and FRAZIER), A., 1162.
- dl*-Dicentrine, resolution of (HAWORTH, PERKIN, and RANKIN), A., 310.
- N*-Di-(2-chloro-5-nitrobenzyl)hydroxylamine (MEISENHEIMER, ZIMMERMANN, and v. KUMMER), A., 406.

- Dichromates. See under Chromium.
- Dichrysofluorenyl (WANSCHIEDT, A., 1239.
- Dioinchonoylhydrazide (KALB and GROSS), A., 614.
- Diclupanodonin (TSUJIMOTO and KIMURA), A., 1226.
- CC-Diclotonylbarbituric acid, dichloro- (URSUM, SCHÜTZ, TAUB, and WINTHROP CHEMICAL CO.), (P.), B., 609.
- Dictyoploca japonica* (wild silk-moth), growth of (SHINODA), A., 196.
- Dicyanodiamido (*cyanoguanidine*), structure of, and its mercury derivative (BELL), A., 1129.
- Di-*p*-dimethylaminobenzhydryl ketone (SINGH), A., 65.
- γ -Di-(dimethylamino)- γ -dimethylhexane (BRUYLANTS), A., 826.
- 3:4-Di-(*NN'*-dimethylamino)phenylarsinic acid (LEWIS and BENT), A., 628.
- [Di-(2:4-dimethyl-3-carbethoxy-pyrryl)]-4-methyl-3:5-dicarbethoxy-2-pyrrylmethane (FISCHER and ERNST), A., 622.
- Di-2:6-dimethyltetrahydro-4:4'-dipyrryl (BORSCHKE and FRANK), A., 409.
- Didiphenylcarbinol, isomeric forms of (STRAUS and DEMUS), A., 1244.
- Didiphenylmethyl chlorides (STRAUS and DEMUS), A., 1244.
- Didymium, infra-red spectra of, in glass and in solutions (LUEG), A., 1193.
- Didymium separation:—
separation of, from cerium (DEUTS. GASGLÜHLICHT-AUER-GES.), (P.), B., 237.
- Didymium minerals, magnetic rotation of (ONNES, BECQUEREL, and DE HAAS), A., 14.
- Dielectrics, organic, liquid or pasty, treatment of, with ionised gases (OELWERKE STERN-SONNEBORN and VOELT), (P.), B., 757.
- solid, effect of X-rays on conductivity of (ROOS), A., 456.
- Dielectric constants (LICHTENCKER), A., 456.
- in relation to electrical conductivity (RABINOVITSCH), A., 359, 360.
- of good conducting materials (ZAHN; HELLMANN and ZAHN), A., 778.
- variation of, with temperature and pressure (ZAHN), A., 456.
- temperature variation of, in quartz, fluorspar, and gypsum (DIETERICH), A., 1193.
- and stereoisomerism of ethylenic compounds (ERRERA and LEPINGLE), A., 777.
- and quantum theory (MENSING and PAULI; VAN VLECK), A., 886.
- of solutions of electrolytes (LATTEY; WALDEN, ULICH, and WERNER), A., 350; (SACK), A., 456.
- of dilute aqueous solutions of electrolytes (HELLMANN and ZAHN), A., 1193.
- of weak electrolytes (NAYDER), A., 225.
- of gases, effect of pressure on (WOLF), A., 1081.
- of diatomic dipole gases (KRONIG; MANNEBACK), A., 993.
- of liquids (MATSUOKA), A., 110; (SAYER and BRISCOE; WALDEN, ULICH, and WERNER), A., 1193.
- of binary mixtures (WILLIAMS and KRCHMA), A., 1000.
- of non-metallic elements (ADDENBROOKE), A., 225.
- Dielectric liquids. See under Liquids.
- Diesel engines. See under Engines.
- Diesel oil (KÜHL), B., 939.
- Diet in relation to growth and reproduction (RANDOIN, ALQUIER, ASSELIN, and CHARLES), A., 208.
- effect of, on growth (OSBORNE and MENDEL), A., 1180.
- and reproduction (GRIGNS), A., 546; (SURE), A., 981.
- acid, effect of, on rate of oxidation (DURN), A., 861.
- relation of calcium and phosphorus in, to their absorption in the intestine (ORR, HOLT, WILKINS, and BOONE), A., 862.
- effect of calcium, potassium, and sodium ions in, on weight of animals (REDINA), A., 1272.
- effect of substitution of glycine and ammonium acetate for protein in, of growing pigs (BUCKENAUER), A., 972.
- effect of mineral content of, on fat in the body (ONOHARA), A., 197.
- effect of ultra-violet light on antirachitic properties of (DUTCHER and KRUGER), A., 1065.
- effect of antirachitic vitamins in, on blood and bone phosphorus (DUTCHER, CREIGHTON, and ROTHROCK), A., 437.
- rich in vitamins and poor in minerals, effect of, on metabolism and urine (KANAMORI), A., 1180.
- of lactating rats, vitamin-B in (HARTWELL), A., 207.
- γ -Diethoxyacetoacetic acid, ethyl ester, preparation and synthetic use of, and α -bromo- and isonitroso- (RUGELEY and JOHNSON), A., 147.
- γ -Diethoxyacetosuccinic acid, diethyl ester (RUGELEY and JOHNSON), A., 147.
- 2:3-Diethoxybenzyl alcohol, and 5-bromo- and 5-nitro- (RUBENSTEIN), A., 518.
- 2:3-Diethoxycinnamic acid, and 5-nitro- (RUBENSTEIN), A., 518.
- Diethoxydi-*m*-tolyls (GOLDSCHMIDT and SCHÖN), A., 721.
- γ - β -Diethoxyethylaminobutacetal (MANNICH and HORKHEIMER), A., 504.
- 5:5-Diethoxymethylbarbituric acid (HILL and KEACH), A., 271.
- Diethoxymethylene (SCHEIDLER), A., 711.
- Diethoxymethylmalonic acid, ethyl ester (HILL and KEACH), A., 271.
- 9:10-Diethoxy- β -phenyl-9:10-dihydroanthracene (BARNETT and MATTHEWS), A., 618.
- β -Diethoxy- α -phenylpropane, α -amino-, and its salts and derivatives (NEBER and v. FRIEDOLSHHEIM), A., 1247.
- β -Diethoxypropionic acid, ethyl ester (STRAUS and VOSS), A., 1124.
- Diethyl ether. See Ethyl ether.
- phosphite, constitution and physical data of (STRECKER and SPITALER), A., 1082.
- sulphoxide, $\alpha\beta\alpha'\beta'$ -tetrachloro- (MÜLLER and METZGER), A., 1224.
- sulphide, $\beta\beta'$ -dichloro-, reactions of, with amino-compounds (LAWSON and REID), A., 80.
- dichloro-, and tetrachloro- (MÜLLER and METZGER), A., 1224.
- Diethylacetonitrile, α -amino-, and its hydrochloride (BILTZ and SLOTTA), A., 1046.
- Diethylacetylcarbamide, bromo-. See Adaline.
- Diethylamine, α -naphthylcarbamide from (FRENCH and WIRTTEL), A., 830.
- picrate (DELABY), A., 272.
- β -Diethylaminoacrylic acid, ethyl ester (STRAUS and VOSS), A., 1124.
- 9-Diethylaminoanthrone, 1:8-dichloro- (BARNETT, COOK, and MATTHEWS), A., 296.
- γ -Diethylaminobutacetal, and its methiodide (MANNICH and HORKHEIMER), A., 504.
- γ -Diethylaminobutyl alcohol, and its benzoate (MANNICH and HORKHEIMER), A., 504.
- α -Diethylamino-*n*-butyric acid, ethyl ester (v. BRAUN, LEISTNER, and MÜNCH), A., 1128.
- Diethylaminocarbethoxyphenylcarbamie acid, ethyl ester, hydrochloride (ÉTABL. POULENC FRÈRES), (P.), B., 898.
- 2- β -Diethylaminoethoxy-3-allylanisole (HAHL and WINTHROP CHEM. CO.), (P.), B., 721.
- 2- β -Diethylaminoethoxy-1-allylnaphthalene (HAHL and WINTHROP CHEM. CO.), (P.), B., 721.
- p*-Diethylaminoethoxybenzoic acid, allyl ester, tartrate, and its mercury compound (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 218.
- 2- β -Diethylaminoethoxy-3-crotonylanisole (HAHL and WINTHROP CHEM. CO.), (P.), B., 721.
- 4-Diethylaminoethoxy-5-methoxy-1-allylbenzene *p*-phenolsulphonate, and its mercury compound (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 218.
- γ -Diethylamino- γ -ethylhexane, and its salts (MONTAGNE), A., 942.
- α - β -Diethylaminoethylpiperidinomethylbenzene (v. BRAUN, KÜHN, and GOLL), A., 1259.
- Diethylaminoethyl propyl ketone (DELABY), A., 272.
- 2-Diethylaminocyclohexyl benzoate (KÖTZ and MERKEL), A., 721.
- Diethylaminoketodihydrodicyclopentadiene, oxime (WIELAND, BERGEL, SCHWARZ, SCHEFF, and FUKELMAN), A., 56.
- Diethylaminomethyl ethyl ether hydrochloride (STEWART and ASTON), A., 824.
- 1-*N*-Diethylamino-5:3':4'-methylenedioxyphenyl-4-penten-3-one, and its hydrochloride (MANNICH), (P.), B., 901.
- β -Diethylamino- β -methylpentane, and its salts (MONTAGNE), A., 942.
- 2-Diethylamino-1:6:8-trinitronaphthalene (VAN DER KAM), A., 1240.
- 5-Diethylaminophenol, 1-amino-, dyes of azoxine series from (KEHRMANN, GUILLET, and BORGEAUD), A., 1262.
- m*-Diethylaminophenol- β -phenylpyridophthalcin (TEWARI and DUTT), A., 1164.
- 1-*N*-Diethylamino-5-phenyl-4-penten-3-one, and its hydrochloride (MANNICH), (P.), B., 901.
- α -Diethylaminopropionic acid, ethyl ester (v. BRAUN, LEISTNER, and MÜNCH), A., 1128.

- β -Diethylamino-*n*-propyl alcohol (v. BRAUN, LEISTNER, and MÜNCH), A., 1128.
and its *p*-amino- and *p*-nitro-benzoate hydrochloride (ADAMS, DREGER, VOLWILER, and ABBOTT LABORATORIES), (P.), B., 851.
- 2-Diethylamino-3-*p*-toluenesulphonylquinoline (TRÖGER and UNGAR), A., 524.
- Diethylantranilic acid, *di*- β -hydroxy-, methyl ester hydrochloride (KIRPIJANOV), A., 950.
- Diethylbarbituric acid, compound of mercuric oxide and (FLEURY), A., 305.
- 1,4-Diethylbenzylpiperazine, *di*- β -amino-, and its benzoyl derivative, and their salts (v. BRAUN, GOLL, and METZ), A., 1233.
- $\beta\beta$ -Diethylbutan- α -ol, γ -amino-, preparation of (BILLON), (P.), B., 899.
- Diethyl-*n*-butylamine (HAGER and MARVEL), A., 1232.
- Diethylcarbinol, naphthylurethane of (BICKEL and FRENCH), A., 517.
- Diethylidixanthyl (CONANT, SMALL, and SLOAN), A., 842.
- Diethylene sulphoxide, $\beta\beta'$ -dichloro- (MÜLLER and METZGER), A., 1224.
- Diethylenediaminecobaltic chloride, *trans*-dichloro-, substitution reaction of, in aqueous solution (MATSUO), A., 1214.
- Diethylenesulphone, $\beta\beta'$ -dichloro- (MÜLLER and METZGER), A., 1224.
- Diethylglutaric acid, condensation of, with ethyl oxalate (ROTUNSTEIN and THORPE), A., 1038.
- $\alpha\alpha$ -Diethylguanidine, and its salts (KLINGNER), A., 946.
picrate of (FROMM), A., 717.
- O*:*N*-Diethyl-*N*-hydroxyethylhydroxylamine, and its salts (JONES and BURNS), A., 156.
- Diethylhydroxylamine, and dihydroxy-, and their salts and derivatives (JONES and BURNS), A., 155.
- $\alpha\alpha$ -Diethyl- γ -hydroxymethyleneacetacetic acid, copper salt, anilide and ethyl ester (BENARY, MEYER, and CHARISIUS), A., 273.
- Diethyl ketone, ketone from condensation of mesityl oxide and, and its semicarbazone (EKELEY and CARPENTER), A., 1143.
- Diethylorthophosphoryl chloride (WALCZYŃSKA), A., 936.
- 1,4-Diethylpiperazine, *di*- β -amino-, and its salts (v. BRAUN, GOLL, and METZ), A., 1233.
- Diethylresorcinol (KLARMANN), A., 1135.
- $\beta\beta$ -Diethylselenobutane (SHAW and REID), A., 497.
- Di*- β -ethylselenoethyl sulphide, sulphoxide, and sulphone (SHAW and REID), A., 498.
- $\gamma\gamma$ -Diethylselenopentane (SHAW and REID), A., 497.
- $\beta\beta$ -Diethylselenopropane (SHAW and REID), A., 497.
- $\alpha\gamma$ -Diethylthiolactone, and its derivatives (ROJAHN and LEMME), A., 146.
- Disoeugenyl ethyl ether (VAN DUIN), A., 612.
- Diffusion, relation between rate of, and viscosity of solvent (MUCHIN and FAERMANN), A., 786.
of electrons (GLOOKER), A., 448.
of solids (HENRY), A., 895.
in solutions (FÜRTT), A., 21; (KARPEN), A., 124.
analysis by (AUERBACH), A., 122.
- Diffuorescein (DUTT), A., 831.
- Digalacturonic acid, identity of pectic acid and, and its barium salt (NELSON), A., 1125.
- Digallic acid as a reagent (NIERENSTEIN), A., 40.
- Digestion, physiology of (SCHWARZ and GEWISS), A., 1274.
changes in blood during (MORGULIS), A., 428.
pancreatic, of proteins (WILLSTÄTTER; NAKASHIMA), A., 1060.
tryptic (EISENBERG), A., 203.
- Digitalis*, active constituents of leaves of (CLOETTA), A., 755.
hot-water infusion of leaves of, and its valuation (FOCKE), B., 896.
individual principles of, in relation to the action of the drug (DE GIACOMI), A., 1173.
extract, aqueous, keeping properties of (HINTZELMANN and JOACHIMOWICZ), B., 607.
glucosides, production of (BOEHRINGER SOHN and RAHN), (P.), B., 720.
preparation of a mixture of (MANNICH), (P.), B., 899.
preparations, strength of (WIJNGAARDEN), B., 719.
physiological assay of (KNAFFL-LENZ), B., 995.
evaluation of (WASICKY, LASCH, and SCHONOVSKI), B., 339.
standardisation of (WIBLE), B., 896.
- Digitogenin, structure of (WINDAUS), A., 1146.
degradation products of (WINDAUS and SHAH), A., 404.
- Digitolic acid, oxidation of (WINDAUS and SHAH), A., 404.
- Digitonin, purification of (WINDAUS), A., 409.
- Digitoxigenin, hydrolysis of (JACOBS, HOFFMANN, and GUSTUS), A., 1250.
- Digitoxin (WINDAUS and FREESE), A., 153.
- Di*-*d*-glucosecarbamide (HELPERICH and KOSCHE), A., 273.
- $\alpha\beta$ -Diglycerophosphoric acid, synthesis and hydrolysis of, and its sodium salt (BAILLY and GAUMÉ), A., 1225.
sodium salt (BAILLY and GAUMÉ), A., 936.
- Diglyclarsanilic acid, and its chloroacetyl derivative (GIEMSA and TROFF), A., 1162.
- 1,4-Diglycidyleucyl-2,5-dimethylpiperazine, and its hydrochloride (ABDERHALDEN and KOHL-EGGER), A., 1047.
- 1,4-Diglycidyl-2,5-dimethylpiperazine, and its hydrochloride (ABDERHALDEN and KOHL-EGGER), A., 1047.
- Diguamide, determination of (GARBY), A., 1164.
- $\alpha\beta$ -Diguandinoethane, preparation of, and its sulphate (SCHENCK and KIRCHHOFF), A., 1129.
- Diguandinoethanes, and their salts (SCHENCK and KIRCHHOFF), A., 1129.
- 1,4-Diheptylpiperazine, *di*-*n*-amino-, and its benzoyl derivative, and their salts (v. BRAUN, GOLL, and METZ), A., 1233.
- Diheterolævulosan, and its salts (PICTET and CHAVAN), A., 1127.
- Dicyclohexanemorpholine, and its derivatives (KÖTZ and MERKEL), A., 721.
- Dihexosan (PICTET and SALZMANN), A., 52.
- 1,4-*Di*-*di*-isohexoyl-2,5-dimethylpiperazine, *di*- α -bromo- (ABDERHALDEN and KOHL-EGGER), A., 1047.
- Dihexylresorcinol (KLARMANN), A., 1135.
- Dicyclohexyls (IPATIEV and ORLOV), A., 59.
- Dicyclohexylamine, 2,2'-dihydroxy-, triacetate (KÖTZ and MERKEL), A., 721.
- Dicyclohexyldixanthyl (CONANT and SMALL), A., 158.
- Di*-*n*-hexyldixanthylethane (CONANT and SMALL), A., 158.
- Dicyclohexylphenylarsine, and its derivatives (ROBERTS, TURNER, and BURY), A., 852.
- Dicyclohexylphenylmethyl chloride (GRAY and MARVEL), A., 43.
- Dihexylresorcinol (KLARMANN), A., 1135.
- spiro*Dihydantoin, and its salts and derivatives (BILTZ and KLEMM), A., 962.
- 1,5-Dihydrazinobenzene, 2,4-dinitro-, and its derivatives (MÜLLER and ZIMMERMANN), A., 163.
- 3,5-Dihydrazinotoluene, 2,4-dinitro-, and its derivatives (BORSCHKE and TRAUTNER), A., 391.
- Dihydroabietic acid, *dihydroxy*-.
- 9,10-Dihydroanthranil acetate, 2,3-dichloro-9-nitro- (BARNETT, MATTHEWS, and WILTSHIRE), A., 1030.
- Dihydroanthraphenone, derivatives of (COOK), A., 953.
- 9,10-Dihydroanthraphenone, 9,10-dichloro- and -dinitro- (COOK), A., 838.
- N*-Dihydro-1:2:1':2'-anthraquinoneazine, and its derivatives (THOMSON, and DU PONT DE NEMOURS & Co.), (P.), B., 577.
- 9,10-Dihydroanthraquinyl-9,10-dipyridinium dibromide, 1,4-dichloro- (BARNETT, MATTHEWS, and WILTSHIRE), A., 1030.
- 7,12-Dihydrobenzophenarsazine, 12-chloro- (BURTON and GIBSON), A., 1162.
- 2,3-Dihydro-1,4-benzoquinone, 2,3-dihydroxy-, and its salts and derivatives (TERRY and MILAS), A., 1249.
- 2,3-Dihydrobenzo-1,4-thiopyrone-5- β -thiolpropionic acid, 8-amino-, and 6,8-dibromo- (FINZI), A., 1255.
- 1,2-Dihydrobenzoxazolone-4-arsenoxide, and 6-chloro- (CASSELLA & Co.), (P.), B., 932.
- 1,2-Dihydrobenzoxazolone-5-arsenoxide (CASSELLA & Co.), (P.), B., 932.
- Dihydrobigitaligenin (CLOETTA), A., 755.
- Dihydrocamphene-2-carboxylic acid (HOUBEN and PFANKUCH), A., 1252.
- Dihydrochaulmoogric acid, and its homologues, synthesis of (NOLLER and ADAMS; HIERS and ADAMS), A., 597.
- Dihydrochaulmoogric acid, α - and β -dihydroxy-, and their derivatives (PERKINS), A., 834.
- Dihydrocinchansulphonic acid (ERBEN, PHILIPPI, and MAULWURF), A., 1160.
- Dihydrocinchoninesulphonic acid, hydroxy- (ERBEN, PHILIPPI, and MAULWURF), A., 1160.
- Dihydrocivetone, and its derivatives (RUZICKA), A., 615.
- Dihydrocodeine, action of ozone on (SPEYER and PORR), A., 532.
acetyl derivative, and its methiodide (DIETEL and DICKENS), A., 746.
- Dihydrocodeine, *dihydroxy*-, and its triacetyl derivative (CAHN and ROBINSON), A., 745.

- Dihydrocorycavidine, and its salts (v. BRUCHHAUSEN), A., 184.
 Dihydrocoumarin, 2-imino-, hydrochloride (HOUTEN and PFANKUCH), A., 951.
 Dihydrocupreansulphonic acid (ERBEN, PHILIPPI, and MAULWURF), A., 1160.
 Dihydrode-*N*-dimethylcorybulbine ethyl ether (GADAMER and SAWAI), A., 1161.
 Dihydrodeoxytetrahydro- α -methylmorphimethine, and its salts (CAHN), A., 1264.
 Dihydrodianthranyl, and dibromo-, dichlorodinitro-, and nitro- (MATTHEWS), A., 205.
 1:1'-Dihydrodi-indenylene, and its dibenzoyl derivative (BRASS and MOSL), A., 838.
 Dihydrodicyclopentadiene, and its derivatives (WIELAND, BERGEL, SCHWARZ, SCHEFF, and FUKELMAN), A., 56.
 Dihydroeugenol(2-methoxy-4-*n*-propylphenol), allyl ether from (CLAISEN and TIETZE), A., 1035.
 4:5-Dihydroglyoxaline-2-thiolacetic acid, derivatives of (STEPHEN and WILSON), A., 1262.
 Dihydrohydnocarpic acid, and its homologues, synthesis of (NOLLER and ADAMS; HIRS and ADAMS), A., 597.
 Dihydroindigotin, 5:7:5':7'-tetrabromo-, derivatives of (POSNER, STOCKENSCHNEIDER, NEUMANN, NACHRING, MEYER, and BEISSNER), A., 1155.
 2:3-Dihydro-4-ketobenz-1:5-heptathiazine-8- β -thiolpropionic acid (FINZI), A., 1255.
 Dihydromethylidihydrothebainonemethine, and its salts and semicarbazone (CAHN), A., 1264.
 1:2-Dihydro-2-methylquinoline, synthesis of (MASON), A., 735.
 Dihydromorphinic acid (SPRYER and POFF), A., 532.
 Dihydromorphazines, substituted (CHATTAWAY and PARKES), A., 308.
 9:10-Dihydrophenanthrene, 9:10-dihydroxy-, and its diacetate (SKITA), A., 174.
 5:10-Dihydrophenarsazine, 10-chloro-, and its derivatives (BURTON and GIBSON), A., 418, 1162.
 10-chloro-1-amino-, hydrochloride, dichloro-, and 2:8:10-trichloro- (BURTON and GIBSON), A., 1162.
 iso-Dihydroprotopine chlorides (HAWORTH and PERKIN), A., 965.
 Dihydroquinine, action of arsenic trichloride on (ERBEN, PHILIPPI, SCHNIDERSCHITZ, SPORER, and DIAMANT), A., 188.
 Dihydroquinine-5-diazoanhydridesulphonic acid (ERBEN, PHILIPPI, and MAULWURF), A., 1160.
 2:3- and 2:5-Dihydroquinol diacetates (DIMROTH, EBER, and WEHR), A., 296.
 Dihydroquinol, dichloro- (DIMROTH, EBER, and WEHR), A., 296.
 Dihydroquinolines (MEISENHEIMER and STOTZ), A., 76.
 monomeric, existence of (KÖNIG and BUCHHEIM), A., 178.
 Dihydrostrophanthidin, oxidation products of (JACOBS and COLLINS), A., 73.
 Dihydrosuberocolic acid (GOSS and INGOLD), A., 821.
 4:5-Dihydrouric acid, 5-amino-4-hydroxy-, salts of (BILTZ and KLEMM), A., 962.
 Dihydroxy-compounds, manufacture of (ESSEX, WARD, and DU PONT DE NEMOURS & Co.), (P.), B., 897.
 Dihydroxytetraiodatostannic acid. See under Tin.
 Dihydroxyhimbine, and its hydrochloride (WARNAT), A., 1263.
 Dihydroxyhimboic acid, and its ethyl ester (WARNAT), A., 1263.
 Di-iminazolyl. See Glycosine.
 Di-indandylmethylamine, and its hydrochloride (COURTOT and DONDELINGER), A., 59.
 Di-indenylthiophen, dihydroxy- (BRASS and MOSL), A., 838.
 2:2-Di-indonyl sulphide, 3:3'-dichloro- (BRASS and MOSL), A., 838.
 Di-indonylaniline, dichloro-, dianil (BRASS and MOSL), A., 838.
 Di-indonylenedithi-in, and its dianil (BRASS and MOSL), A., 838.
 Di-isatinthiocarbohydrazone (GUHA and DEX), A., 417.
 3:5-Diketo-1-benzylcyclohexane (LINSTEAD and WILLIAMS), A., 1245.
 iso-2:5-Diketo-6-isobutyl-3-methylenepiperazine, and its sodium salt and diacetyl derivative (BERGMANN and STATHER), A., 740.
 1:4-Diketo-compounds, reaction of hydrazine with (KORSCHUN and ROLL), A., 961.
 $\alpha\gamma$ -Diketo- $\alpha\gamma$ -di-*p*-chlorophenylheptane (SKRAUP and GUGGENHEIMER), A., 171.
 $\alpha\zeta$ -Diketo- $\alpha\zeta$ -di-*p*-chlorophenylhexane (SKRAUP and GUGGENHEIMER), A., 170.
 $\alpha\epsilon$ -Diketo- $\alpha\epsilon$ -di-*p*-chlorophenylpentane (SKRAUP and GUGGENHEIMER), A., 170.
 2:4-Diketo-3:4-dihydrofin-1:3-naphthoxazine (FRIES and HASS), A., 289.
 Di-3-(3-keto-4:6-dimethyl-2-coumaranyl)-4:6-dimethylcoumaran-2-one, and 5-chloro- (STOLLÉ and STAMM), A., 1253.
 Di-3-(3-keto-4:6-dimethyl-2-coumaranyl)-7-methyl-4-isopropylcoumaran-2-one (STOLLÉ and STAMM), A., 1253.
 2:3-Diketo-1:8-dimethyltetrahydroquinoline (HELLER, FUCHS, JACOBSON, RASCHIG, and SCHÜTZE), A., 620.
 2:4-Diketo-3:5-diphenyltetrahydrothiazole-2-isopropylidenehydrazone (STEPHEN and WILSON), A., 1262.
 allo-2:5-Diketo-3-methylenepiperazine (BERGMANN and ENSSLIN), A., 740.
 allo-2:5-Diketo-6-methyl-3-methylenepiperazine (BERGMANN and ENSSLIN), A., 740.
 2:3-Diketo-1-methyltetrahydroquinoline, 6:8-dibromo-, and 6-chloro- (HELLER, FUCHS, JACOBSON, RASCHIG, and SCHÜTZE), A., 620.
 β -Diketones, carboxylated (MORGAN and PORTER), A., 836.
 γ -Diketones, stereochemistry of the oximes of (WITTIG and BANGERT), A., 175.
 salt formation from (WEYGAND and FORKEL), A., 1249.
 8-Diketones, action of hydrazine on (KORSCHUN and ROLL), A., 1154.
 2:4-Diketo-3-phenyl-5-ethyltetrahydrothiazole, and its 2-isopropylidenehydrazone (STEPHEN and WILSON), A., 1262.
 2:4-Diketo-3-phenyltetrahydrothiazole-2-isopropylidenehydrazone (STEPHEN and WILSON), A., 1262.
 Diketopiperazine, kinetics of fission of (v. EULER and PETTERSSON), A., 1108.
 2:5-Diketopiperazine, reduction of (GAVRILOV), A., 306.
 Diketopiperazines, physical and chemical properties of (ABDERHALDEN and HAAS), A., 312.
 desmotic forms of (ABDERHALDEN and SCHWAB), A., 181.
 action of alkali on (LEVENE and PFALTZ), A., 1259.
 action of, on dyes and tannins (BERGMANN, MIEKELEY, and KANN), A., 1259.
 action of phenylcarbimide on (LUDTKE), A., 306.
 2:5-Diketopiperazines, physical properties of (ABDERHALDEN and HAAS), A., 959, 960.
 isomerism of polypeptides and (ABDERHALDEN and SCHWAB), A., 630.
 enolic, preparation of (ABDERHALDEN and GEBELEIN), A., 623.
 isomeric, action of ozone on (ABDERHALDEN and SCHWAB), A., 959.
 2:3-Diketotetrahydroquinoline, 6-mono- and 6:8-di-bromo-, and 6-chloro- (HELLER, FUCHS, JACOBSON, RASCHIG, and SCHÜTZE), A., 620.
 2:4-Diketotetrahydrothiazole, 3-amino-, salts and derivatives (STEPHEN and WILSON), A., 1263.
 3:2'-Diketo-4:6:4':6'-tetramethyl-2:3'-dicoumaran, 5-chloro- (STOLLÉ and STAMM), A., 1253.
 3:2'-Diketo-7:4':6'-trimethyl-4-isopropyl-2:3'-dicoumaran (STOLLÉ and STAMM), A., 1253.
 Dilatation coefficient of amorphous substances (SAMSOEN), A., 570.
 Dilatometer, differential automatic (CHEVENARD), B., 365.
 Dilatometry, kinetics of reactions by means of (BENRATH and others), A., 363.
 Dileucyl-L-cystine dianhydride (BERGMANN and STATHER), A., 740.
 1:4-Di-*dl*-leucyl-2:5-dimethylpiperazine, and its hydrobromide, and dichloroacetyl derivative (ABDERHALDEN and KOHL-EGGER), A., 1047.
 leucoDimalachite-green (DUTT), A., 831.
 Di-Meldola's blue (DUTT), A., 831.
 ϵ -Dimenthylethane (RUPE and GUBLER), A., 841.
 2:3-Dimethoxyacetophenone, synthesis of, and its *p*-nitrophenylhydrazone (MAUTHNER), A., 404.
 $\alpha\alpha'$ -Dimethoxyazelaic acid, and its silver salt and derivatives (GOSS and INGOLD), A., 821.
 3:4-Dimethoxybenzaldehyde. See Veratraldehyde.
 4:5-Dimethoxybenzaldehyde, 3-hydroxy-, and its derivative, (MAUTHNER), A., 1038.
 3:5-Dimethoxybenzene, chlorodinitro-derivatives (VAN RIJN), A., 510.
 1-chloro-2:4-di- and 2:4:6-tri-nitro- (SCHLUBACH and MERTENHALER), A., 284.
 2:4-Dimethoxybenzophenone 2':4'-dinitrophenylhydrazone (SKRAUP and BÖHM), A., 722.
 3:4'-Dimethoxybenzophenone (LEA and ROBINSON), A., 1144.
 2:6-Dimethoxy-*p*-benzoquinone, 3-bromo- and 5-chloro-3-bromo- (LEVINE), A., 516.
 3-chloro- (LEVINE), A., 1244.

- 2:3-Dimethoxybenzoyl chloride (MAUTHNER), A., 404.
 2:3-Dimethoxybenzoyl acetic acid, ethyl ester, and its pyrazolone derivative (MAUTHNER), A., 404.
 ω -2:4-Dimethoxybenzoylacetophenone, copper derivative (BRADLEY and ROBINSON), A., 1145.
 β -2:4-Dimethoxybenzoylpropionic acid, and its oxime (MURAI), A., 951.
 2:3-Dimethoxybenzyl alcohol, 5-bromo- and 5-nitro- (RUBENSTEIN), A., 518.
 3:4-Dimethoxybenzyl bromide (FREUDENBERG, CARRARA, and COHN), A., 74.
 2(2:3-Dimethoxybenzylidene)-1-hydrindone (PERKIN, RAY, and ROBINSON), A., 733.
 2:6-Dimethoxy-2-(3':4':5'-trichloro-2':6'-dimethoxyphenoxy)-benzoquinone, 3:5-dichloro- (HUNTER and LEVINE), A., 839.
 2:3-Dimethoxycinnamic acids, 5- and 6-nitro-, and their ethyl esters (RUBENSTEIN), A., 518.
 Dimethoxydiazobenzenesulphonic acids, ammonium salts (PERKIN and RUBENSTEIN), A., 304.
 Dimethoxyisodibenzanthrone (THOMSON, THOMAS, and SCOTTISH DYES, LTD.), (P.), B., 868.
 3:3-Dimethoxydibenzoylhydrazine, 4:4'-dihydroxy- (KALB and GROSS), A., 614.
 6:7-Dimethoxy-1-(β -dimethylaminoethyl)phenanthrene, and its salts (ROBINSON and SHINDO), A., 1048.
 5:7-Dimethoxy-2:4-dimethylbenzopyrylium chloraurate (KEHRMANN and RIEDER), A., 732.
 5:5'-Dimethoxydiphenyl disulphides, 2:2'- and 4:4'-dinitro- (HODGSON and HANDLEY), A., 516.
 Dimethoxy-2:4-diphenylbenzopyrylium salts (KEHRMANN and RIEDER), A., 732.
 2:4-Dimethoxydiphenylmethane (SKRAUP and BÖHM), A., 722.
 2:4-Dimethoxydiphenyl- α -naphthylmethane (SZÉKI), A., 285.
 Dimethoxydiphenyl- α -tolylmethanes (SZÉKI), A., 285.
 Dimethoxydistyryl ketones, dihydroxy- (MCGOOKIN and SINCLAIR), A., 838.
 $\alpha\mu$ -Dimethoxydodecane (CHUIT), A., 499.
 2:4-Dimethoxy-1-ethylbenzene (SKRAUP and BÖHM), A., 722.
 3':4'-Dimethoxyflavonyl salts, and 7-hydroxy- (ROBERTSON and ROBINSON), A., 1042.
 Dimethoxyglutaric acids, hydroxy- (ZEMPLÉN and BRAUN), A., 1230.
 $\alpha\pi$ -Dimethoxyhexadecane (CHUIT), A., 500.
 1:3-Dimethoxy-5-cyclohexane-0:1:2-spirodicyclopentene, 4-nitro- (HASSELL and INGOLD), A., 954.
 5:6-Dimethoxy-1-hydrindone, 2-bromo- and 2-cyano- (PERKIN, RAY, and ROBINSON), A., 733.
 5:6-Dimethoxy-1-hydrindone-2-carboxylic acid, ethyl ester (PERKIN, RAY, and ROBINSON), A., 733.
 5:6-Dimethoxy-1-hydrindone-2-carboxylic acid, ethyl ester (PERKIN and ROBINSON), A., 733.
 $\alpha\beta$ -Dimethoxy- γ -hydroxypropane. See $\alpha\beta$ -Dimethylglycerol.
 3:7-Dimethoxy-2:6-dihydroxythianthren disulphide, and its diacetyl derivative (SEN and RAY), A., 734.
 2-[3(5:6-Dimethoxyindeno(1:2)]dimethoxybenzopyrylium ferri-chlorides (PERKIN, RAY, and ROBINSON), A., 733.
 2:3-[5:6-Dimethoxyindeno(1:2)]- δ -methoxybenzopyrylium ferri-chloride (PERKIN, RAY, and ROBINSON), A., 733.
 2:3[5:6-Dimethoxyindeno(1:2)]-6:7-methylenedioxybenzopyrylium ferri-chloride (PERKIN, RAY, and ROBINSON), A., 733.
 5:6-Dimethoxyindole-2-carboxylic acid, ethyl ester (PERKIN and RUBENSTEIN), A., 394.
 3:4-Dimethoxy-2-methylacetophenone, and its semicarbazone (v. BRUCHHAUSEN), A., 184.
 5:6-Dimethoxy-3:4-methylenedioxyallylbenzene. See Apiole.
 6:7-Dimethoxy-1-(3':4'-methylenedioxy- ω -cyanobenzyl)-2-methyl-tetrahydroisoquinoline (EDWARDS), A., 735.
 5:6-Dimethoxy-3:4-methylenedioxypropenylbenzene. See iso-Apiole.
 7:4-Dimethoxy-2-methylisoflavone, 5-hydroxy- (BAKER and ROBINSON), A., 1253.
 7:8-Dimethoxy-5-methyl-2:3-phenanthrenoquinoxaline (OBERLIN), A., 283.
 7:8-Dimethoxy-5-methylquinoline, 2:3-dihydroxy- (OBERLIN), A., 283.
 5:6-Dimethoxyphenanthrene, 3:4-dihydroxy- (GOTO), A., 1160.
 4:5-Dimethoxyphenylacetic acid, 3-hydroxy-. See Iridic acid.
 3:4-Dimethoxyphenylarsinic acid, dinitro- (DE LANGE), A., 279.
 δ -3:4-Dimethoxyphenylbutan- β -ol, and its acetate (FAILLERIN), A., 51.
 2-Dimethoxyphenyldecacydronaphthalenes (GYSIN), A., 389.
 9:10-Dimethoxy-9-phenyl-9:10-dihydroanthracene, 1:5-dichloro- (BARNETT and MATTHEWS), A., 618.
 3-(3':4'-Dimethoxyphenyl)-5:7-dimethoxychroman, and bromo- (FREUDENBERG, CARRARA, and COHN), A., 74.
 Dimethoxyphenylhydrazines, and their hydrochlorides (PERKIN and RUBENSTEIN), A., 394.
 Dimethoxyphenylhydrazinosulphonic acids, ammonium salts (PERKIN and RUBENSTEIN), A., 394.
 3:4-Dimethoxyphenyl-2-hydroxystyryl ketone (ROBERTSON and ROBINSON), A., 1042.
 Dimethoxy-4-phenyl-2-methylbenzopyrylium salts (KEHRMANN and RIEDER), A., 732.
 3:4-Dimethoxyphenyl 3:4-methylenedioxy- β -phenyl- α -aminoethyl ketone, and its salts (CAMPBELL, HAWORTH, and PERKIN), A., 303.
 3:4-Dimethoxyphenyl 3:4-methylenedioxy- β -phenylethyl ketone, derivatives of (CAMPBELL, HAWORTH, and PERKIN), A., 303.
 3:4-Dimethoxyphenyl methyl ketone, derivatives of (FLOEG), A., 614.
 Di(γ -methoxy- γ -phenyl- π -propyl)methylamine, and its hydrochloride (DULIÈRE), A., 723.
 1:3-Dimethoxyphenyl-4-tellurichloride (MORGAN and DREW), A., 83.
 α -(3:4-Dimethoxyphenyl)- β -(2':4':6'-trimethoxyphenyl)propane (FREUDENBERG, CARRARA, and COHN), A., 74.
 α -(3:4-Dimethoxyphenyl)- β -(2':4':6'-trimethoxyphenyl)- α -propylene (FREUDENBERG, CARRARA, and COHN), A., 74.
 Dimethoxyphthalic acid, methyl ester (HEMMELMAYR and MEYER), A., 404.
 $\alpha\alpha'$ -Dimethoxypimelamides (HASSELL and INGOLD), A., 820.
 2:6-Dimethoxyquinol, 3:5-dibromo- and -dichloro-, diacetates (HUNTER and LEVINE), A., 839.
 7:4'-Dimethoxy-2-styryl-6-methylisoflavone, 5-hydroxy-, and its acetyl derivative (BAKER and ROBINSON), A., 1253.
 2- $m\mu$ -Dimethoxystyrylquinoline, and its derivatives (TRÖGER and DUNKER), A., 526.
 3:4-Dimethoxystyryl veratryl ketone (PERKIN, RAY, and ROBINSON), A., 733.
 $\alpha\alpha'$ -Dimethoxysuberic acids (GOSS and INGOLD), A., 821.
 $meso$ -Dimethoxysuccinic acid, derivatives of (HAWORTH and HIRST), A., 941, 1126.
 1:2-Dimethoxyterephthalic acid (KAWAI), A., 609.
 $\alpha\zeta$ -Dimethoxytetradecane (CHUIT), A., 499.
 6:7-Dimethoxytetrahydrocarbazole (PERKIN and ROBINSON), A., 394.
 3:4-Dimethoxytoluene. See Homoveratrole.
 2:5-Dimethoxy-3:4:6-trimethylbenzaldehyde, and its oxime (SMITH and DOBROVOLNY), A., 836.
 2:5-Dimethoxy-3:4:6-trimethylbenzyl alcohol (SMITH and DOBROVOLNY), A., 836.
 2:5-Dimethoxy-3:4:6-trimethylbenzylidenemalononic acid, and its silver salt (SMITH and DOBROVOLNY), A., 836.
 2:5-Dimethoxy-3:4:6-trimethylbenzylmalonic acid (SMITH and DOBROVOLNY), A., 836.
 Dimethyl ether. See Methyl ether.
 Dimethylacetophenones, hydroxy-, and their derivatives (v. AUWERS, BUNDESMANN, and WIENERS), A., 609.
 Dimethyl- β -(β -acetoxycethoxy)ethylamine (CALLSEN and WINTROP CHEMICAL Co.), (P.), B., 608.
 Dimethylacetoxymethylsulphonium bromide (RENSHAW, BACON, and ROBLER), A., 497.
 $\alpha\beta'$ -Dimethyladipic acid, and its derivatives (v. BRAUN and HAENSEL), A., 1143.
 N : ω -Dimethylallophanic acid, ethyl ester (MERCK and DIEHL), (P.), B., 931.
 Dimethylamidocarbonylactic acids, and their salts (HOLMBERG), A., 939.
 Dimethylamine, α -naphthylcarbamide from (FRENCH and WIRTEL), A., 830.
 p -Dimethylamino- $p''p''$ -diaminotriphenylmethane (DUTT), A., 830.
 p -Dimethylaminoanilo-1-benzylbenzthiazole (SKRAUP and BÖHM), A., 722.
 p -Dimethylaminoanilodeoxybenzoin (SKRAUP and BÖHM), A., 722.
 p -Dimethylaminoazobenzene- p -sulphonazide (CURTIUS and STOLL), A., 393.
 p -Dimethylaminobenzaldehyde, reaction of tryptophan with (KOMM), A., 1045.
 4-Dimethylaminobenzaldehyde, 3-bromo- and 3-nitro-, condensation of ethyl acetate with ammonia and (HINKEL and MADEL), A., 413.

- p*-Dimethylamino- α -benzaldoxime, benzoyl derivative (BRADY and McHUGH), A., 69.
- p*-4-Dimethylaminobenzeneazo-*p*'*p*''-diaminotriphenylmethane (DUTT), A., 830.
- p*-Dimethylaminobenzoic acid, and its ethyl ester (SINGH), A., 65.
- p*-Dimethylaminobenzoylazotriphenylmethane (WIELAND, VOM HOVE, and BÖRNER), A., 62.
- p*-Dimethylaminobenzoylazotri-*p*-tolylmethane (WIELAND, VOM HOVE, and BÖRNER), A., 62.
- p*-Dimethylaminobenzoyltriphenylmethylhydrazine (WIELAND, VOM HOVE, and BÖRNER), A., 62.
- p*-Dimethylaminobenzoyltriphenylmethylhydrazine (WIELAND, VOM HOVE, and BÖRNER), A., 62.
- p*-Dimethylamino- β -benzopinacol (WIELAND, VOM HOVE, and BÖRNER), A., 62.
- β -Dimethylamino- β -benzylbutane, and its chloroplatinate (BRUYLANTS), A., 826.
- γ -Dimethylaminobutylalcohol, and its methiodide (MANNICH and HORKHEIMER), A., 504.
- γ -Dimethylaminobutaldehyde, and its chloroaurate (MANNICH and HORKHEIMER), A., 504.
- γ -Dimethylaminobutyl alcohol, and its derivatives (MANNICH and HORKHEIMER), A., 504.
- 3-Dimethylamino-2,4-dimethylpyrrole-5-carboxylic acid, ethyl ester (FISCHER and STERN), A., 304.
- 4-Dimethylaminodiphenyl, and 3-amino-, derivatives of, and 2-nitro- (BELL and KENYON), A., 1241.
- p*-Dimethylaminodiphenylacetic acid, and its barium salt (SINGH), A., 65.
- 2'-Dimethylaminodiphenylarsinic acid, 2-bromo- (BURTON and GIBSON), A., 418.
- β -Dimethylamino- $\beta\beta$ -diphenylethane (SOMMELET), A., 946.
- 2- β -Dimethylaminoethoxy-3-allylamine (HAHL and WINTHROP CHEM. Co.), (P.), B., 721.
- δ - β -Dimethylaminoethoxy-7-allylquinoline (HAHL and WINTHROP CHEM. Co.), (P.), B., 721.
- β -Dimethylaminoethyl vinyl sulphide (LAWSON and REID), A., 80.
- 2-Dimethylaminocyclohexanol, and its hydrochloride (KÖTZ and MERKEL), A., 721.
- 2-Dimethylaminocyclohexyl esters (KÖTZ and MERKEL), A., 721.
- Dimethylaminohydroxyphenazone (KEHRMANN, GRILLET, and BORGEAUD), A., 1262.
- β -Dimethylamino- β -methylbutane (VELGHE), A., 1044.
- β -Dimethylamino- β -3-methylcyclohexylethyl alcohol, and its derivatives (v. BRAUN and TEUFFERT), A., 66.
- β -Dimethylamino- β -methylpentane, and its salts (MONTAGNE), A., 942; (VELGHE), A., 1044.
- γ -Dimethylamino- γ -methylpentane, and its chloroplatinate (BRUYLANTS), A., 826.
- 2-Dimethylamino-1:6:8-trinitronaphthalene (VAN DER KAM), A., 1240.
- β -Dimethylamino- α -*p*-nitrophenylpropionic acid (MANNICH and STEIN), A., 166.
- α -Dimethylamino- $\Delta\beta$ -pentenenitrile (BRUYLANTS), A., 826.
- α -Dimethylaminocyclopentylacetic acid, ethyl ester, and its salts (v. BRAUN and MÜCH), A., 1122.
- β -Dimethylamino- β -cyclopentylethyl alcohol, and its salts (v. BRAUN and MÜCH), A., 1122.
- 4'-Dimethylamino-4:5-phenazino-2-phenylglyoxaline (SIRCAR and DE), A., 417.
- 5-Dimethylaminophenol, 1-amino-, dyes of azoxine series from (KEHRMANN, GRILLET, and BORGEAUD), A., 1262.
- p*-Dimethylaminophenyl methyl selenide (CHALLENGER, PETERS, and HALÉVY), A., 966.
- β -Dimethylamino- ϵ -phenyl-*n*-amyl alcohol, and its salts (v. BRAUN and MÜCH), A., 1122.
- 10-Dimethylaminophenylanthracene, 1:8-dichloro- (BARNETT, COOK, and MATTHEWS), A., 296.
- β -Dimethylamino- β -phenylbutane, and its picrate (BRUYLANTS), A., 826.
- α -Dimethylamino- α -phenyl- $\Delta\beta$ -butene (BRUYLANTS), A., 826.
- 4-*p*-Dimethylaminophenyl-2:6-dimethyl-1:4-dihydropyridine-3:5-dicarboxylic acid, 4-*m*-bromo- and 4-*m*-nitro-, ethyl esters (HINKEL and MADEL), A., 413.
- 4-Dimethylamino-1-phenyl-2:3-dimethyl-5-pyrazolone, compounds of, with halogenated alcohols and their carbamates (I. G. FARBENIND.), (P.), B., 931.
- colourless compounds of dialkylbarbituric acids with (CHEM. FABR. VORM. SCHERING), (P.), B., 931.
- 4-Dimethylamino-1-phenyl-2:3-dimethyl-5-pyrazolone, compound of dialkylbarbituric acid and (CHEM. FABR. SCHERING), (P.), B., 932*.
- analgesic compound from cyclohexenylethylbarbituric acid and (SCHULEMANN, MEISENBURG, and WINTHROP CHEM. Co.), (P.), B., 931.
- compound of phenylethylbarbituric acid and (CHEM. FABR. SCHERING and THIELE), (P.), B., 515*.
- additive compounds of, with isopropylpropenyl- and phenyl ethyl-barbituric acids (PFEIFFER), (P.), B., 172.
- 4-*p*-Dimethylaminophenyl-2:6-dimethylpyridino-3:5-dicarboxylic acid, 4-*m*-bromo-, and 4-*m*-nitro-, ethyl esters (HINKEL and MADEL), A., 413.
- (*p*-Dimethylaminophenyl)(2:4-dimethylpyrrolene-3- β -methylmalonic)-methene (FISCHER and NENTZESCU), A., 178.
- 4-Dimethylaminophenylhydroxynaphthylcarbinols (MOIR), A., 403.
- 10-Dimethylaminophenyl-9-phenylanthracene, 1:5-dichloro- (BARNETT and MATTHEWS), A., 618.
- α -Dimethylamino-8-phenyl-*n*-valeric acid, ethyl ester and salts of (v. BRAUN and MÜCH), A., 1122.
- α -Dimethylamino- β -isopropylidenedioxypropane, and its methiodide (FREUDENBERG and HESS), A., 935.
- 2-Dimethylaminopyridine, and its salts (MAGIDSON and MENSCHIKOV), A., 845; (TSCHITSCHIBABIN and KONOVALOVA), A., 1153.
- 4-Dimethylaminopyridine, and its salts (KOENIGS, FRIEDRICH, and JURANY), A., 179.
- Dimethylaminorhamnosyl isopropylidene ether (FREUDENBERG and WOLF), A., 601.
- 4-(*p*-Dimethylaminostyryl)-6-methylquinoline (BROWNING, COHEN, ELLINGWORTH, and GULBRANSEN), A., 1153.
- 2-(*p*-Dimethylaminostyryl)quinoline methochloride, derivatives of (BROWNING, COHEN, ELLINGWORTH, and GULBRANSEN), A., 1153.
- 4'-Dimethylamino-9-styrylxanthylium chloride, 3:6-dihydroxy- (ATKINSON and HEILBRON), A., 620.
- p*-Dimethylaminotetraphenylethylene glycol (SINGH), A., 65.
- Dimethylaminotriphenylazoxincazine hydrochloride (KEHRMANN, GRILLET, and BORGEAUD), A., 1262.
- 2:5-Dimethyl-1-isoamylpyrrole, and its 3:4-dibenzoquinone derivative (PIERONI and VEREMENCO), A., 1157.
- 2:5-Dimethyl-1-isoamylpyrrole-3:4-dicarboxylic acid, and its ethyl ester (PIERONI and VEREMENCO), A., 1157.
- 2:5-Dimethyl-1-isoamyl-3-triphenylmethylpyrrole (PIERONI and VEREMENCO), A., 1157.
- Dimethylaniline propyl sulphate (POFELIER), A., 1123.
- Dimethylaniline, *p*-iodo-, action of nitrous acid on, and 4-iodo-2-nitro- (AITKEN and READE), A., 946.
- p*-nitroso-, dinitrone from ethyl phenylpropionate and (ALESANDRI), A., 1038.
- 4:4'-Dimethylanilindiphenyl, 3:3'-dinitro- (LE FÈVRE and TURNER), A., 1029.
- NN*-Dimethyl- α -anisidine, 4-nitro- (C. K. and E. H. INGOLD), A., 833.
- 1:3-Dimethyl-4-anisylhydantoin (HAHN and GILMAN), A., 181.
- 1:4-Dimethylantracene, and its picrate (v. BRAUN and BAYER), A., 729.
- 9:10-Dimethylantracene, and 9:10-di-bromo-, and its salts (BARNETT and MATTHEWS), A., 1030.
- 1:3-Dimethylantrone (v. BRAUN and BAYER), A., 729.
- 1:4-Dimethylantrone (v. BRAUN and BAYER), A., 729.
- $\beta\delta$ -Dimethyl-*d*-arabinose (ZEMPLÉN and BRAUN), A., 1230.
- 3:6-Dimethylbenzaldehyde, 2-hydroxy-, oximo (v. AUWERS, BUNDESMANN, and WIENERS), A., 609.
- Dimethylbenzamides, dibromohydroxy- (LINDEMANN and MÜHLHAUS), A., 80.
- 2:6-Dimethylbenzothiazole hexabromide (HUNTER), A., 626.
- 2:4-Dimethylbenzoic acid, and bromo-, chloro-, and hydroxy-derivatives, and their derivatives (PERKIN and STONE), A., 64.
- Dimethylbenzonitriles, dibromohydroxy-, and their acetyl derivatives (LINDEMANN and MÜHLHAUS), A., 80.
- 2:3-Dimethylbenzopyrone, 7-hydroxy-, and its 8-propionyl derivative (WITTIG and RICHTER), A., 302.
- Dimethylbenzo-1:4-pyrones, and their acetyl derivatives and nitro- (WITTIG, BANGERT, and RICHTER), A., 300.
- Dimethylbenzo-1:4-pyrones, *mono*- and *di*-chloro-, and hydroxy- (WITTIG, BANGERT, and RICHTER), A., 301.
- 2:4-Dimethylbenzoyl chloride, action of halogens on (PERKIN and STONE), A., 64.
- 3:5-Dimethylbenzthiazole, 1-amino-, and its *tetrabromide* (HUNTER), A., 850.

- α 8-Di-*p*-methylbenzylaminoadipic acid** (v. BRAUN and LEISTNER), A., 1255.
- $\alpha\alpha$ -Di-*p*-methylbenzylaminopimelic acid, ethyl ester** (v. BRAUN and LEISTNER), A., 1255.
- Dimethylbenzylidencazides, dibromohydroxy-** (LINDEMANN and MÜHLHAUS), A., 80.
- 3:4-Dimethyl-2-bromomethylpyrrole-5-carboxylic acid, ethyl ester** (FISCHER and WALACH), A., 1257.
- 3:4-Dimethyl-2-bromomethylpyrrolenylmethene, 5-bromo-, hydrobromide** (FISCHER and WALACH), A., 1257.
- $\alpha\alpha$ -Dimethylbutane- α - γ -tricarboxylic acid, and β -hydroxy-, derivatives of** (ROBERTS), A., 1125.
- 3:3-Dimethyl-2-isobutyl-1-methylenecyclohexane.** See *iso*Butyl- γ -cyclogeraniolene.
- 1- $\alpha\alpha$ -Dimethylbutylpiperidine, and its chloroplatinate** (VELGHE), A., 1044.
- N*-Dimethylcarbamide, α -cyano-** (BILTZ and SLOTTA), A., 1046.
- 4-*s*-Dimethylcarbamido-5-methoxy-1-methyl- Δ^3 -glyoxal-2-one, and its derivatives** (BILTZ and KLEIN), A., 182.
- Dimethylcarbazole, and its nitroso-derivative** (v. BRAUN and HAENSEL), A., 1143.
- 2:5-Dimethyl-3-carbethoxypyrryl-5-arsinic acid** (FISCHER and MÜLLER), A., 75.
- Dimethyl- β -chloroethylcarbinol** (SPÄTH and SPITZKY), A., 81.
- Dimethyl(chloro)haemin, action of benzoyl peroxide on** (KÜSTER and RUFF), A., 313.
- Dimethyl(chloro)haemin, pentachloro-** (KÜSTER and ZIMMERMANN), A., 748.
- Dimethyl(chloro)haeminium methochloride, and its ammonia derivative** (KÜSTER), A., 749.
- 3:4-2':6'-Dimethylchromo-5- and -6-methyl-2:6-ozadiazines** (WITIG and BANGERT), A., 176.
- Dimethylchromones, oximes of** (WITIG and BANGERT), A., 176.
- Dimethylciba-yellow monohydrate** (POSNER and HOFMEISTER), A., 1156.
- 2:3-Dimethylcoumaran** (CLAISEN and TIETZE), A., 1242.
- 3:4-Dimethylcoumarin, 6-chloro-** (WITIG, BANGERT, and RICHTER), A., 301.
- β -Dimethyl- Δ^3 -decadiene** (ESCOURROU), A., 1120.
- β -Dimethyl- Δ^3 -decen- ζ -ol, and its acetate** (ESCOURROU), A., 1023.
- 9:10-Dimethyldianilino-9:10-dihydroanthracene, 1:4-dichloro-** (BARNETT, MATTHEWS, and WILTSHIRE), A., 1030.
- 3:7-Dimethylspirodihydantoin, diacetyl derivative** (BILTZ and KLEMM), A., 962.
- 1:4-Dimethyldihydroanthrol** (v. BRAUN and BAYER), A., 729.
- 9:9'-Dimethyl-9:10-dihydrodianthranyl** (BARNETT and MATTHEWS), A., 618.
- 3:6-Dimethyl-4:5-dihydro-1:2-diazine-4-carboxylic acid, ethyl ester, heat of combustion of** (GOUNDER and ROLL), A., 1155.
- 3:6-Dimethyl-4:5-dihydro-1:2-diazine-4:5-dicarboxylic acid, ethyl ester, heat of combustion of** (GOUNDER and ROLL), A., 1155.
- 2:8-Dimethyl-5:10-dihydrophenarsazine, 10-chloro-, and its 5-acetyl derivative** (BURTON and GIBSON), A., 419.
- Dimethyl diketone monoxime-*o*-nitrophenylhydrazono** (GUHA and DE), A., 743.
- 2:2'-Dimethyldiphenyl (2:2'-*ditolyl*), phenylated derivatives of** (TSCHITSCHIBABIN and SEROEIEV), A., 610.
- 2:2'-Dimethyldiphenyl, *pp'*-dibromo-** (CONN and LOWY), A., 1111.
- 3:3'-Dimethyldiphenyl (3:3'-*ditolyl*), 4:4'-dichloroamino-** (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 866.
- dihydroxy-derivatives** (GOLDSCHMIDT and SCHÖN), A., 721.
- 4:4'-Dimethyldiphenyl (4:4'-*ditolyl*), nitro-derivatives** (DENNETT and TURNER), A., 391.
- Dimethyldisulphoisatides** (WAHL and FAIVRET), A., 79, 960.
- Dimethyldixanthyl** (CONANT, SMALL, and SLOAN), A., 842.
- NN*-Dimethyl-*N'*-ethylguanidine, and its salts** (SCHENCK and KIRCHHOFF), A., 717.
- 5:5-Dimethyl-1-ethylhydantoin** (BILTZ and SLOTTA), A., 1046.
- 3:3-Dimethyl-2-ethyl-1-methylenecyclohexane.** See *Ethyl- γ -cyclogeraniolene*.
- 3:4-Dimethyl-6-ethylphenol, and its phenylurethane** (v. AUWERS, BUNDESMANN, and WIENERS), A., 609.
- 1- $\alpha\alpha$ -Dimethylethylpiperidine, and its chloroplatinate** (VELGHE), A., 1044.
- $\alpha\alpha$ -Di-2-methyl-5-ethylpiperidinoadipic acid, ethyl ester** (v. BRAUN, LEISTNER, and MÜNCH), A., 1128.
- 3:4-Dimethyl-4-ethyl-5-pyrazolone** (BACKER and MEYER), A., 305.
- 2:4-Dimethyl-5-ethylpyrrole-3-acrylic acid** (FISCHER and WALACH), A., 178.
- 2:4-Dimethyl-5-ethylpyrrole-2-aldehyde, and its derivatives** (FISCHER and WALACH), A., 411.
- 2:4-Dimethyl-3-ethylpyrrole-5-carboxylic acid, ethyl ester** (FISCHER and WALACH), A., 178, 411.
- derivatives of** (FISCHER and ERNST), A., 622.
- 2:4-Dimethyl-5-ethylpyrrole-3-propionic acid** (FISCHER and WALACH), A., 412.
- Di-(4-methyl-3-ethyl-2-pyrrol) methane-5:5'-dicarboxylic acid, ethyl ester** (FISCHER and HALBIO), A., 621.
- Dimethyl- γ -cyclogeraniolene** (ESCOURROU), A., 1233.
- β - γ -Dimethylgluconolactone** (LEVENE and MEYER), A., 49.
- Dimethylglucose, crystalline form of** (HAWORTH and SEDGWICK), A., 1228.
- $\alpha\beta$ -Dimethylglycerol, and its derivatives** (GILCHRIST and PURVES), A., 153.
- Dimethylglyoxime, reduction of** (FREJKA and ZAHLOVA), A., 1233.
- s*-Dimethylguanidine, salts of** (SCHENCK and KIRCHHOFF), A., 717.
- NN'*-Dimethylguanidine, salts of** (SCHENCK and KIRCHHOFF), A., 717.
- β -Dimethylheptan- β -diol, and γ -bromo-, and γ -chloro-** (PASTUREAU and ZAMENHOF), A., 1227.
- β -Dimethylheptan- β -ol, $\gamma\delta$ -dibromo-, and its bromo-derivative** (PASTUREAU and ZAMENHOF), A., 1227.
- $\beta\beta$ -Dimethylheptan- γ -one, and its semicarbazone** (LEERS), A., 711.
- $\gamma\gamma$ -Dimethylheptan- β -one, and its semicarbazone** (LEERS), A., 711.
- β -Dimethyl- Δ^3 -hepten- ζ -ol acetate** (ESCOURROU), A., 1022.
- β -Dimethyl- Δ^3 -hepten- β -ol** (PASTUREAU and ZAMENHOF), A., 1227.
- and its esters as perfumes** (FARB. v. BAYER & Co.), (P.), B., 464.
- $\alpha\alpha$ -Dimethylheptioic acid, and its derivatives** (LEERS), A., 711.
- $\beta\beta$ -Dimethylheptioic acid, α -hydroxy-** (LEERS), A., 711.
- Dimethylcyclohexadiene** (GODCHOT and BEDOS), A., 169.
- $\beta\gamma$ -Dimethylhexane- $\beta\gamma$ -diol** (LEERS), A., 596.
- $\beta\epsilon$ -Dimethylhexane- $\beta\gamma$ -diol** (NICOLLE), A., 383.
- 5:5-Dimethylcyclohexane-1:3-dione, aluminium and beryllium salts of** (WEYGAND and FORKEL), A., 1249.
- 3:5-Dimethylcyclohexanol, derivatives of** (v. BRAUN and HAENSEL), A., 1143.
- 2:5-Dimethylcyclohexanols** (GODCHOT and BEDOS), A., 280.
- $\gamma\epsilon$ -Dimethylhexan- γ -ol- β -one, and its semicarbazone** (LEERS), A., 599.
- 2:5-Dimethylcyclohexanone, and its semicarbazone** (GODCHOT and BEDOS), A., 281.
- cis*- and *trans*-3:5-Dimethylcyclohexanones, and their derivatives, and 2-chloro-** (v. BRAUN and HAENSEL), A., 1143.
- 3:5'-Dimethylcyclohexanoneoxime, and its benzoyl derivative** (v. BRAUN and HAENSEL), A., 1143.
- 1:3-Dimethyl- Δ^3 -cyclohexen-5-one thiosemicarbazone** (MACUREVITSCH), A., 521.
- 3:5-Dimethyl- Δ^2 -cyclohexenone, phenyl- and thio-semicarbazones** (MACUREVITSCH), A., 170.
- $\beta\epsilon$ -Dimethyl- Δ^3 -hexinone- $\beta\epsilon$ -diol, action of hydrogen bromide and phosphorus tribromide on, and its dibromides** (KRESTINSKY), A., 1121.
- $\gamma\epsilon$ -Dimethyl- Δ^4 -hexinon- γ -ol, and its allophanate** (LEERS), A., 596.
- $\alpha\alpha$ -Dimethylhexoic acid, amide and chloride of** (LEERS), A., 711.
- cis*- and *trans*-3:5-Dimethylcyclohexylamines, and their salts and derivatives** (v. BRAUN and HAENSEL), A., 1143.
- 5:5-Dimethylhydantoin, 1:3-dichloro-** (BILTZ and SLOTTA), A., 1046.
- Dimethylhydrazomethanesulphonic acid, potassium salts** (RASCHIG and PRAHL), A., 940.
- Dimethylhydrosulphofluoric acid.** See 3:6-Dimethyl-9-phenyl-xanthen-*o*-sulphonic acid.
- 1:4-Dimethyl-3- α -hydroxyethylpiperidine, and 4-hydroxy-, and their derivatives** (MANNICH and BALL), A., 523.
- Dimethyl- β -hydroxyethylsulphonium iodide** (RENSHAW, BACON, and ROBYER), A., 497.
- Dimethylhydroxymethylpyrrolecarboxylic acids, ethyl esters** (FISCHER and STERN), A., 303.
- 5:5-Dimethylisoidigotin** (WAHL and FAIVRET), A., 79.
- Dimethylisoidigotins, and their derivatives** (WAHL and FAIVRET), A., 960.
- $\alpha\beta$ -Di-2-methylindolyethane, and its salts** (PUTOCHIN), A., 1151.

- 2:4-Dimethylindoxazen, and 6-nitro- (LINDEMANN and THIELE), A., 1047.
- 3:5-Dimethylindoxazen, 4:6-dibromo- (LINDEMANN and MÜHLHAUS), A., 80.
- Dimethyl- β -iodoethylcarbinol (SPÄTH and SPITZKY), A., 81.
- 5:5'-Dimethylisatide (WAHL and FAIVRET), A., 960.
- 1:7- and 4:6-Dimethylisatins, and derivatives of the latter (HELLER, FUCHS, JACOBSON, RASCHIO, and SCHÜTZER), A., 621.
- α -Dimethylitaconic acid, γ -chloro-, and its salts and derivatives (KÜSTER, MAURER, and PALM), A., 713.
- hydroxy-, lactone from (KÜSTER, MAURER, and PALM), A., 1024.
- 3:3-Dimethyl-1-methylenecyclohexane. See γ -cycloGeraniolene.
- β -Dimethyl- Δ^8 -nonadiene (ESCOURROU), A., 1120.
- β -Dimethyl- Δ^8 -nonen- ζ -ol acetate (ESCOURROU), A., 1023.
- β -Dimethyl- Δ^8 -octadiene (ESCOURROU), A., 1120.
- β -Dimethyl- Δ^8 -octadiene (PASTUREAU and ZAMENHOF), A., 1227.
- β -Dimethyloctane- β -diol (LEERS), A., 596.
- γ -Dimethyloctane- γ -diol (PASTUREAU and ZAMENHOF), A., 1227.
- β -Dimethyloctan- γ -one, and its semicarbazone (LEERS), A., 711.
- γ -Dimethyloctan- β -one, and its semicarbazone (LEERS), A., 711.
- γ -Dimethyloctan- ϵ -one, and its derivatives (JONES and SMITH), A., 72.
- β -Dimethyl- Δ^8 -octen- ζ -ol acetate (ESCOURROU), A., 1022.
- γ -Dimethyl- Δ^8 -octen- γ -ol (PASTUREAU and ZAMENHOF), A., 1227.
- γ -Dimethyl- Δ^8 -octen- ϵ -one, and its derivatives (JONES and SMITH), A., 72.
- 1:1-Dimethylcyclohexane (FRANKE and SIGMUND), A., 202.
- β -Dimethylpentane (DE GRAEFF), A., 495.
- 1:3-Dimethylcyclopentane (CHAVANNE), A., 1130.
- β -Dimethylpentane- β -diol (NICOLLE), A., 383.
- 1:2-Dimethylcyclopentan-1-ol (VAN RYSELBERGE), A., 1238.
- 1:3-Dimethylcyclopentanol (CHAVANNE), A., 1130.
- γ -Dimethylpentan- γ -ol- β -one, and its semicarbazone (LEERS), A., 599.
- 1:2-Dimethylcyclopentene, formation and reduction of (VAN RYSELBERGE), A., 1238.
- 1:1-Dimethyl- Δ^2 -cyclopenten-2-ol-4-one, 3-bromo- (ROTHSTEIN and THORPE), A., 1039.
- γ -Dimethyl- Δ^2 -pentinen- γ -ol, and its allophanate (LEERS), A., 596.
- 2:8-Dimethylphenarsazinic acid, and its salts and *N*-acetyl derivative (BURTON and GIBSON), A., 419.
- 5:7-Dimethylphenmorpholone (v. AUWERS and FRESE), A., 530.
- Dimethylphenols, 2-amino-, benzoyl derivatives (v. AUWERS, BUNDESMANN, and WIENERS), A., 609.
- 10:10-Dimethylphenoxarsonium iodide (ROBERTS and TURNER), A., 852.
- 3:6-Dimethyl-9-phenylxanthen- α -sulphonic acid (ORNDORFF and PURDY), A., 1037.
- 2:5-Dimethylpiperazine, preparation of, and its dichloroacetyl derivative (ABDERHALDEN and KOHL-EGGER), A., 1047.
- dl*-cis-2:5-Dimethylpiperazine, preparation and resolution of, and its derivatives (KIPPING and POPE), A., 739.
- trans*-2:5-Dimethylpiperazine, formation of, from *dl*-alanine (KIPPING and POPE), A., 388.
- d*- and *l*-cis-2:5-Dimethylpiperazine-*d*-bismethylenecamphor (KIPPING and POPE), A., 739.
- 1:4-Dimethylpiperidine-3-carboxylic acid, and 4-hydroxy-, and their derivatives (MANNICH and STEIN), A., 523.
- 3:3-Dimethyl-2-propyl-1-methylenecyclohexane. See Propyl- γ -cycloGeraniolene.
- 1- α -Dimethylpropylpiperidine (VELOHE), A., 1044.
- 2:8-Dimethyl-5-isopropylquinoline, and its chloroaurate (PHILLIPS and GOSS), A., 626.
- pp'*-Dimethylpulvinamide (KARRER, GEHRCKENS, and HEUSS), A., 726.
- Dimethylpyran, tribromo- (BORSCHKE and FRANK), A., 409.
- 1:4-Dimethylpyrazole (ROJAHN and KÜHLING), A., 847.
- 1:5-Dimethylpyrazole ethiodide (v. AUWERS and HOLLMANN), A., 847.
- Dimethylpyrazoles, and 4-bromo-, and their salts (v. AUWERS and HOLLMANN), A., 624.
- Dimethylpyrazolecarboxylic acids, and their derivatives (ROJAHN and KÜHLING), A., 624, 847.
- and their methyl esters, and 4-bromo- (v. AUWERS and HOLLMANN), A., 623.
- Dimethylpyrazole-5(3)-carboxylic acids, esters, and their methiodides (v. AUWERS and HOLLMANN), A., 847.
- 3:5-Dimethylpyrazole-4-diazonium chloride, velocity of formation of (REILLY and BASTIBLE), A., 1156.
- 3:4-Dimethyl-5-pyrazolone, 1-nitroso- (BACKER and MEYER), A., 306.
- 3:4-Dimethyl-5-pyrazolone-1-carbamide (BACKER and MEYER), A., 309.
- 3:4-Dimethyl-5-pyrazolone-1-carboxylic acid, esters (BACKER and MEYER), A., 305.
- 2:5-Dimethylpyridine chloroplatinate (CURTIUS and BERTHO), A., 509.
- Dimethyl-3-pyridylalkine, and its picrate (OPARINA), A., 844.
- 1:4-Dimethylpyrrole picrate (ROJAHN and KÜHLING), A., 624.
- 2:4-Dimethylpyrrole picrate (FISCHER and HALBIG), A., 621.
- 2:4-Dimethylpyrrole-5-aldehyde, 3-bromo-, and its derivatives (FISCHER and ERNST), A., 621.
- 2:4-Dimethylpyrrole-5-carboxylic acid, 3-amino-, ethyl ester, and its salts (FISCHER and STERN), A., 303.
- 3-bromo-, ethyl ester (FISCHER and ERNST), A., 621.
- 2:5-Dimethylpyrrole-3:4-dicarboxylic acid, 1-amino-, ethyl ester, heat of combustion of (GOUNDER and ROLL), A., 1155.
- 3:4-Dimethylpyrrol-5-bromo-3:4-dimethylpyrrolenylmethene, 5-bromo-, and its hydrobromide (FISCHER and WALACH), A., 1257.
- Di-(4-methyl-2-pyrryl)ethane (FISCHER and HALBIG), A., 621.
- Di-(4-methyl-2-pyrryl)ethane-3:3'-dicarboxylic acid, ethyl ester (FISCHER and HALBIG), A., 621.
- s*-Di-(4-methyl-2-pyrryl)ethane-3:3':5:5'-tetracarboxylic acid (FISCHER and HALBIG), A., 621.
- Di-(4-methyl-2-pyrryl)methanedicarboxylic acids, and their ethyl esters (FISCHER and HALBIG), A., 621.
- Di-(4-methyl-2-pyrryl)methane-3:3':5:5'-tetracarboxylic acid, ethyl ester (FISCHER and HALBIG), A., 621.
- 3:4-Dimethylpyrrol-2:3:4-trimethylpyrrolenylmethene, 5-bromo-, and its hydrobromide and copper derivative (FISCHER and WALACH), A., 1257.
- Dimethylsinomenols, and their derivatives (GOTO), A., 1160.
- Dimethylstibine cyanide and oxycyanide (MORGAN and YARSLLEY), A., 508.
- halides, oxide, and oxyhalides (MORGAN and DAVIES), A., 507.
- Dimethylstibinic acid (MORGAN and DAVIES), A., 507.
- 3:6-Dimethylsulphonefluoran, and its hydrochloride, and dibromo-, and its triammonium salt (ORNDORFF and PURDY), A., 1037.
- Dimethyltetrahydrocarbazole (v. BRAUN and HAENSEL), A., 1143.
- 3:6-Dimethyltetrahydrocarbazole, and its picrate (OAKESHOTT and PLANT), A., 843.
- Dimethyltetrahydrodianthrol (v. BRAUN and BAYER), A., 729.
- 2:6-Dimethyltetrahydropyran, 4-bromo- and 4-chloro- (BORSCHKE and FRANK), A., 409.
- 2:6-Dimethyltetrahydropyran-4-carboxylic acid, and its derivatives (BORSCHKE and FRANK), A., 409.
- 2:6-Dimethyltetrahydropyran-4-ol, preparation and derivatives of (BORSCHKE and FRANK), A., 409.
- 1:4-Dimethyltetrahydropyridine-3-carboxylic acid, and its derivatives (MANNICH and STEIN), A., 523.
- 1:5-Dimethyl-1:2:3:4-tetrazole (SCHMIDT), (P.), B., 932.
- 4:5-Dimethylthiouracil, and its sodium salt (POETSCH and BEHREND), A., 739.
- 1:3-Dimethyluric acid, spontaneous oxidation of (PIAUX), A., 1261.
- β -Dimethylvaleric acid, and its derivatives (LOCQUIN and LEERS), A., 599.
- 1:4-Di-*dl*- γ -methylvaleroyl-2:5-dimethylpiperazine, *di*- α -bromo-. See 1:4-Di-*dl*-isocaproonyl-2:5-dimethylpiperazine, *di*- α -bromo-.
- 2:4-Dimethyl-3-vinylpyrrole-5-carboxylic acid, and its ethyl ester, and its conversion into cryptopyrrole (FISCHER and WALACH), A., 178.
- pp'*-Dimethylvinpinic acid, and its methyl ether (KARRER, GEHRCKENS, and HEUSS), A., 725.
- Dimolybdatotetramminecobaltic trimolybdate. See under Cobalt bases.
- Dimolybdomalic acid, salts of, and their rotation (DARMOIS and GABIANO), A., 271; (DARMOIS), A., 559.
- Dimorphine, hydroxy-, action of Marquis' reagent on (LEULIER and DUBREUIL), A., 1050.

- $\alpha\alpha$ -Dinaphthfluorenol (WANSCHIEDT), A., 1239.
 $\alpha\alpha$ -Dinaphthfluorenone, and its derivatives (WANSCHIEDT), A., 1239.
 $\alpha\alpha$ -Dinaphthfluorenyl bromide and iodide (WANSCHIEDT), A., 1239.
 $\alpha\beta$ -Di-2-naphthalenesulphonamidossuccinic acids (KUHIN and ZUMSTEIN), A., 606.
*spiro*Di-2:2'- β -naphthapyran (DILTHEY, BERRES, HÖLTERHOFF, and WÜBKEN), A., 1255.
Di- β -naphthaquinonethiocarbohydrazone (GUHA and DEY), A., 417.
Di- β -naphthaquinonyl sulphide, dichloro- (BRASS and MOSL), A., 839.
 $\alpha\alpha'$ - and $\alpha\beta'$ -Dinaphthazox-5-ones, and their hydrochlorides (GOLDSTEIN and RADAVANOVITCH), A., 1159.
 $\alpha\alpha'$ - and $\alpha\beta'$ -Dinaphthoxazines, and their hydrochlorides and acetyl derivatives (GOLDSTEIN and RADAVANOVITCH), A., 1159.
Dinaphthoyl-*p,p'*-diaminoazobenzene, di-2:3-hydroxy- (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 433.
Dinaphthoyl-*m,m'*-diaminoazoxybenzene, di-2:3-hydroxy- (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 433.
Dinaphthyl sulphides, 1:6:8:1':6':8'-hexanitro- (VAN DER KAM), A., 1240.
Di- β -naphthylaminobenzene, chlorodinitro- (BORSCHKE and TRAUTNER), A., 390.
Di- α -naphthylbenzylidicarbimide, and its salts (KLINGNER), A., 945.
1:1'-Dinaphthylearbinols, dihydroxy- (MOIR), A., 403.
Dinaphthylperoxydinaphthylene oxide, structure of, and its perchlorate (PUMMERER and RIECHE), A., 1135.
Dinaphthylene dioxide, preparation of (PUMMERER, PRELL, and RIECHE), A., 1135.
nitro-derivatives of, black ink from (INOUE), (P.), B., 596.
 β -Dinaphthylene oxide, di- and tetra-nitro-derivatives (RYAN, FLOOD, and McNULTZ), A., 620.
Dinaphthylmethylenes, manufacture of (RUPE), (P.), B., 185.
Dinaphthylmethylenes, di-5-bromo-, and their salts (RUPE and METZGER), A., 65.
Di- α -naphthylmethylxanthidrol (CONANT, SMALL, and SLOAN), A., 842.
2:4-Di- α -naphthyl-3-phenyl- γ -chromene, and its derivatives (LÖWENBEIN and ROSENBAUM), A., 955.
Di- α -naphthylthiocarbamide, preparation of (GUGLIAMELLI and NOVELLI), A., 720.
Di- β -naphthylvinyl ketone (GIBSON, HARIHARAN, MENON, and SIMONSEN), A., 1154.
Dinitrones from ethyl phenylpropionate and *p*-nitrosomethylaniline and *p*-nitrosodimethylaniline (ALESSANDRI), A., 1038.
from α -diketonic acids (ALESSANDRI), A., 287.
Dioctahydrodianthranol (v. BRAUN and BAYER), A., 173.
 $\alpha\beta\gamma\delta$ -Dioxidopentane (PRÉVOST), A., 936.
Dioximes (PONZIO), A., 295, 850, 1159; (PONZIO and PEROLIO), A., 308; (PONZIO and DE PAOLINI), A., 825.
Dicyclopentadienes, and their derivatives (WIELAND, BERGEL, SCHWARZ, SCHEPP, and FUKELMAN), A., 56.
Dipentene dihydrohalides, action of metals on (ROBERTS), A., 72.
Dipeptides, synthesis of (BERGMANN, STERN, and WITTE), A., 1236.
enzymic fission of (v. EULER and JOSEPHSON), A., 388, 1174.
action of ozone on (ABDERHALDEN and SCHWAB), A., 959.
Diphenacylcianoacetic acid, ethyl ester (R. M. and J. N. RAY), A., 168.
Diphenanthraquinonethiocarbohydrazone (GUHA and DEY), A., 417.
Di-*p*-phenetylacetamidine (SEN and RAY), A., 606.
Diphenic acid, β -dinitro-, constitution and resolution of, and its derivatives (CHRISTIE, HOLDERNESS, and KENNER), A., 518.
tri- and tetra-nitro-, salts of (CHRISTIE and KENNER), A., 403.
2:6-Diphenoxybenzoquinone, 2:6-di-2':4':6'-trichloro- (HUNTER and MORSE), A., 839.
pp'-Diphenoxydiphenyl ditelluride and telluridichloride (DREW), A., 311.
4:4'-Diphenoxydiphenyl, 3:3'-dinitro- (LE FÈVRE and TURNER), A., 1029.
yy'-Diphenoxydipropyl sulphide (BENNETT and HOCK), A., 146.
d-(α -Diphenoxy- β -methylbutane (v. BRAUN and JOSTES), A., 825.
 α -Di-*p*-phenoxyphenylthiocarbamide (LANGE and REED), A., 606.
Diphenosuccindene series (BRAND and SASAKI), A., 157; (BRAND, MÜLLER, and KESSLER), A., 1135.
Diphenyl, space formula of (LE FÈVRE and TURNER), A., 1131.
ether, *p*-amino-, hydrochloride (LANGE and REED), A., 606.
2:4-diamino-, and its diacetyl derivative and hydrochloride (BOGERT), (P.), B., 433.
2:4:5:2':4'-pentanitro- (BORSCHKE and FESKE), A., 606.
3-nitro-4-hydroxy- (LEA and ROBINSON), A., 397.
ethers, substituted (RAIFORD and COLBERT), A., 1243.
m-phenylene sulphides, amino- and nitro-, and their derivatives (FINZI and PAGLIARI), A., 948.
dipotassium pyrophosphate (NEUBERG and WAGNER), A., 757.
oxide, utilisation of, in power generation (Dow), B., 855.
sulphides, dichlorodiamino- (HODGSON), A., 511.
Diphenyl, 4-amino-, 3-chloro-4-amino-, and 4-hydroxylamino-, and their derivatives (BELL, KENYON, and ROBINSON), A., 830.
3:4-diamino-, and its derivatives and 4-amino-4'-hydroxy-, and 3-nitro-4-amino-, derivatives of (BELL and KENYON), A., 1241.
4-amino-4'-hydroxy-, preparation and derivatives of (PUMMERER and DALLY), A., 1133.
4-acetyl and 4-benzoyl derivatives, and their derivatives (RAIFORD and CLARKE), A., 517.
3:5-dibromo-, mono-, di-, and tri-bromoamino-3:4-dichloro-, mono-, di-, and tri-chloroamino-, and their acetyl derivatives (SCARBOROUGH and WATERS), A., 512.
4:4'-dibromo-2:3'-diamino- and -2:3'-dinitro-, and 4:4'-dichloro-2:3'-dinitro-, and their derivatives (DENNETT and TURNER), A., 391.
bromonitro-, bromonitroamino-, chloronitro-, and chloronitro-amino-derivatives (LE FÈVRE and TURNER), A., 1029.
4:4'-dichloroamino- (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 866.
4:4'-dichlorodinitro-, isomeric, and 3:5'-dinitro-4'-amino-4-hydroxy- (HODGSON and GOROWARA), A., 945.
p-hydroxylamino-, and its derivative with benzaldehyde (GILMAN and KIRBY), A., 1029.
4:4'-diiodo-2-nitro-, and 4:4'-diiodo-2:2'-dinitro- (HODGSON), A., 1133.
Diphenyl series (DENNETT and TURNER), A., 391; (BELL, KENYON, and ROBINSON), A., 830; (HODGSON and GOROWARA), A., 945; (LE FÈVRE and TURNER), A., 946, 1029; (HODGSON), A., 1133; (BELL and KENYON), A., 1241.
Diphenylacetdiethylamide (MAXIM), A., 837.
5:10-Diphenyl-5-acridol, chloro-derivatives, and their derivatives (GOMBERG and TABERN), A., 738.
 $\alpha\gamma$ -Diphenylallyl alcohol, and its acetate, and its isomerisation to phenyl β -phenylethyl ketone (NOMURA), A., 70.
Diphenylamine, infra-red absorption spectrum of (BELL), A., 453.
sensitiveness of, as reagent for nitric acid (KRAUER), B., 537.
compounds of sarcosine anhydride and (PFEIFFER and ANGERN), A., 739.
isoamyl and ethyl sulphates (PEPÉLIER), A., 1123.
Diphenylamine, bromo-, chloro-, iodo-, 2:4-dinitro-, and trinitro- (VAN DER KAM), A., 1240.
pp'-dichloro- (BURTON and GIBSON), A., 1162.
Diphenylamines, chloroaminothio-, and their derivatives (HODGSON), A., 511.
nitro- and chloronitro-, acetyl derivatives (KEHRMANN and BAUMGARTNER), A., 829.
Diphenylamine-*p*-arsinic acid, and its *N*-acetyl derivative (BURTON and GIBSON), A., 419.
Diphenylamine-2-carboxylic acid, amino-, diamino-, nitro-, and dinitro-, and their derivatives (GOLDSTEIN and RODEL), A., 1138.
2':5'-dichloro- (GOMBERG and TABERN), A., 738.
Diphenylamine-4'-carboxylic acid, 2:4-dinitro-, ethyl ester (Gori), A., 1037.
Diphenylaminechloroarsine, manufacture of (TANNER and GRASSELLI CHEMICAL Co.), (P.), B., 76.
Diphenyl- $\beta\gamma$ -diamino-*n*-butane, di-*p*-nitroso-, and its hydrochloride (MORGAN, HICKINBOTTOM, and BARKER), A., 503.
Diphenyl- $\beta\gamma$ -diaminobutanes, and their salts (MORGAN, HICKINBOTTOM, and BARKER), A., 503.
 δ -Diphenylaminosemicarbazide hydrochloride, and its benzylidene derivative (BAIRD and WILSON), A., 1141.
Diphenyl-*p*-anisyl-2- α -hydroxy-*p*-anisylpyridinium salts (DILTHEY, FRÖDE, and KOENEN), A., 1254.
1:4-Diphenyl-6-*p*-anisyl-2- α -hydroxy-*p*-tolylpyridinium salts (DILTHEY, FRÖDE, and KOENEN), A., 1254.
Diphenylanisylmethoxyphosphorus dichlorides (BOYD and SMITH), A., 1161.

- Diphenyl-*p*-anisylmethylphosphinic acid, and its dipotassium salt (BOYD and SMITH), A., 1161.
- 2:6-Diphenyl-4-*p*-anisylpyrylium perchlorate (DILTHEY, FRÖDE, and KOENEN), A., 1254.
- 4:6-Diphenyl-2-*p*-anisylpyrylium dihydrochloride, 4-*p*-amino-, and its acetyl derivative, perchlorate (DILTHEY and BERRES), A., 177.
- 9:10-Diphenylanthracene, and its tetrabromide (BARNETT and MATTHEWS), A., 1030.
- 2:2'-Diphenyl-6:6'-arsenoquinoline-4:4'-dicarboxylic acid (CALVERY, NOLLER, and ADAMS), A., 188.
- Diphenylarsinic acid, 2-bromo-6'-amino-, and -6'-nitro- (BURTON and GIBSON), A., 418.
- Diphenyl-4'-arsinic acid, 4-hydroxy-, preparation of (BOEHRINGER & SÖHNE), (P.), B., 900.
- 1:3-Diphenylbarbituric acid, 5-bromo-, hydrazide (MACBETH, NUNAN, and TRAILL), A., 846.
- 2-imino- (BASTERFIELD, WOODS, and WRIGHT), A., 1132.
- 5:6-Diphenyl-1:4:7-benzheptatriazine (GUHA and DE), A., 743.
- 2:3-Diphenylbenzo-1:4-pyrone, 6-chloro-, and its oxime (WITTIG, BANGERT, and RICHTER), A., 301.
- 2:3-Diphenylbenzo- γ -pyrone, 7:8-dihydroxy-, and its diacetyl derivative (BAKER), A., 75.
- 2:3-Diphenylbenzopyrylium perchlorate (LÖWENBEIN and ROSENBAUM), A., 955.
- 2:3-Diphenyl-4-benzyl- γ -chromene, and its salts (LÖWENBEIN and ROSENBAUM), A., 955.
- l*- $\alpha\alpha$ -Diphenyl- β -benzylethyl alcohol, β -amino- (McKENZIE, ROGER, and WILLS), A., 610.
- 2:3-Diphenyl-4-benzylidene- γ -chromene (LÖWENBEIN and ROSENBAUM), A., 955.
- Diphenylbenzylphosphonium chlorobromide (MEISENHEIMER), A., 1237.
- 2:3-Diphenyl-1-benzyltetrahydroglyoxaline (GRÄNACHER, SCHELING, and SCHLATTER), A., 78.
- $\alpha\delta$ -Diphenyl-4 γ -butadiene, γ -nitro- α -cyano- and $\gamma\delta$ -dinitro- α -cyano- (NEBER and PAESCHKE), A., 1119.
- $\alpha\delta$ -Diphenyl-4 γ -butadiene- α -carboxylic acid, nitro-, methyl ester (NEBER and PAESCHKE), A., 1120.
- Diphenylcyclobutane, supposed, constitution of (STOERMER, THIER, and LAAGE), A., 160.
- 2:4-Diphenylcyclobutane-1-carboxylic acid, and 3-amino-, and its derivatives (STOERMER, NEUMAERKER, and SCHMIDT), A., 291.
- 2:4-Diphenylcyclobutane-1-carboxylic acid, 3-hydroxy-, and its dihydrate (STOERMER, NEUMAERKER, and SCHMIDT), A., 291.
- $\alpha\delta$ -Diphenyl-4 α -butene, $\gamma\delta$ -dinitro- α -cyano- (NEBER and PAESCHKE), A., 1119.
- $\alpha\delta$ -Diphenyl-4 β -butene, $\alpha\beta\delta$ -tribromo- (SALKIND and KRUGLOW), A., 1122.
- $\alpha\delta$ -Diphenyl-4 β -butene- $\alpha\delta$ -diol, action of hydrobromic acid on, and its bromo-oxide and bromides (SALKIND and KRUGLOW), A., 1122.
- $\alpha\alpha$ -Diphenyl- β -isobutylethanol, β -amino- (BETZIECHE and EHRICH), A., 1234.
- $\beta\beta$ -Diphenylbutyric acid, α -hydroxy-, ethyl ester (BARDON and RAMART), A., 950.
- Diphenylcaoutchouc, dihydroxy-, and its dimethyl ether (FISHER, GRAY, and McCOLM), A., 730.
- d*- $\alpha\beta$ -Diphenylcarbamidopropane (LEVENE and WALTI), A., 937.
- $\alpha\beta$ -Diphenylcarbamidosuccinic acids (KUHN and ZUMSTEIN), A., 506.
- Diphenylcarbamyl- α -methoxy- β -benzaldehyde (BRADY and McHUGH), A., 69.
- Diphenylcarbazide dinitrosoamino (BAMBERGER, PADOVA, and ORMEROD), A., 416.
- Diphenylcarbinol. See Benzhydrol.
- Diphenylcarbinols, chloro- (TSCHITSCHIBABIN and SCHESLER), A., 158.
- Diphenylcarboxylic acids, bromo- (GOMBERG and PERNERT), A., 944.
- Diphenylchloroarsine, di-*p*-chloro- (HUNT and TURNER), A., 186.
- 4:6-Diphenylcoumalin. See 4:6-Diphenyl-2-pyrone.
- 3:4-Diphenylcoumarin, 6-chloro- (WITTIG, BANGERT, and RICHTER), A., 301.
- 1:3-Diphenylisodiazomethane, bromonitro- and chloronitro-derivatives (CHATTAWAY and WALKER), A., 169.
- d*- $\alpha\beta$ -Diphenyl- $\alpha\beta$ -dibenzylethyl alcohol (McKENZIE, ROGER, and WILLS), A., 610.
- Diphenyl-3:3'-dicarboxylic acid, 2:2'-dinitro-, and its ethyl ester (BURTON, HAMMOND, and KENNER), A., 966.
- 2:4-Diphenyl-3:5-diethylthiophen (BOGERT and ANDERSEN), A., 311.
- Diphenoyldihydrazide (KALB and GROSS), A., 614.
- 5-Diphenyldihydroacridine, 7-amino-, and 1:7-diamino-, synthesis of (GOLDSTEIN and RODEL), A., 1151.
- 5:5-Diphenyldihydroacridines, amino-derivatives, and their acetyl derivatives (KEHRMANN and BRUNNER), A., 526.
- diamino- and their acetyl derivatives, and nitroamino- (KEHRMANN, TSCHUDI, and TSCHUI), A., 526.
- Diphenyldihydroacridones, amino-, fluorescence and solution colour of (KEHRMANN, GOLDSTEIN, and BRUNNER), A., 558.
- 1:5-Diphenyl-1:4-dihydropentazine, 1:2:4-dibromo- (CHATTAWAY and PARKES), A., 309.
- 2:6-Diphenyl-2:3-dihydropentazine (PONZIO and PEROLIO), A., 308.
- Diphenyldimethylarsonium iodide, *p*-bromo- (HUNT and TURNER), A., 186.
- 2:4-Diphenyl-3:6-dimethylchromen-2-ol methyl ether (ZIEGLER, FRIES, and SALZER), A., 955.
- 3:6-Diphenyl-2:5-dimethyl-3:6-dihydro-pyrazine, di-*o*-nitro-, and its derivatives (NEBER and v. FRIEDOLSHHEIM), A., 1248.
- s*-Diphenyldimethyl-*p*-phenylenediamine, preparation of (PICCARD), A., 1133.
- 2:4-Diphenyl-3:5-dimethylthiophen (BOGERT and ANDERSEN), A., 311.
- 2:3-Diphenyl-5-diphenylcarbonylisooxazolidine, and its methyl ether (KÖHLER), A., 309.
- Diphenyl-3:4-diphenyl-5-isooxazolylcarbinol (KÖHLER), A., 309.
- Diphenylene sulphide (COURTOT and POMONIS), A., 620.
- sulphide, preparation of (SCHÖNBERG), (P.), B., 528.
- sulphides, amino-, *mono*- and *di*-nitro-, and their derivatives (COURTOT and POMONIS), A., 605.
- dithionitrite (RHEINOLDT), A., 819.
- Diphenyleneacetic acid, chloro-, fluorenyl ester (KLEGL, WÜNSCH, and WEIGLE), A., 613.
- o*-Diphenylene-2:3-phenazinoiminazole (SIRCAR and DE), A., 417.
- Diphenylenesulphinone (COURTOT and POMONIS), A., 605.
- s*-Diphenylethane (*dibenzyl*), 3:4'-diamino-, and its derivatives (HARRISON), A., 807.
- 4:4'-dibromo-2:2'-dinitro-, and 4:4'-dichloro-2:2'-dinitro- (VAN DER LEE), A., 1245.
- 2:4-dihydroxy- (KLARMANN), B., 515; (KLARMANN and LEHN & FINK, Inc.), (P.), B., 931.
- 2:4:6-trihydroxy-, and its acetates (KLARMANN and FIODOR), A., 516.
- $\alpha\beta$ -Diphenylethane-2:2'-dicarboxylic acid, and its amido (FUSON), A., 604.
- d*- $\alpha\beta$ -Diphenylethanol (LEVENE and MIKESKA), A., 45.
- $\alpha\alpha$ -Diphenylethyl alcohol, $\beta\beta$ -dinitro- (LIPP, LÜDICKE, KALINOV, and PETKOV), A., 1029.
- $\alpha\beta$ -Diphenylethyl alcohol, 3:4'-dinitro- (HARRISON and WOOD), A., 604.
- $\alpha\beta$ -Diphenylethyl chloride (LEVENE and MIKESKA), A., 45.
- mercaptan (LEVENE and MIKESKA), A., 46.
- $\alpha\alpha$ -Diphenylethylamine phenylcarbamide (LIPP, LÜDICKE, KALINOV, and PETKOV), A., 1029.
- $\alpha\beta$ -Diphenylethylamine, and its hydrochloride (TORRÈS y GONZÁLES), A., 396, 609.
- Di- β -phenylethyldixanthyl (CONANT, SMALL, and SLOAN), A., 842.
- Diphenylethylene, and nitro-, reactions of (LIPP, LÜDICKE, KALINOV, and PETKOV), A., 1029.
- Diphenylethylenediurethane (BASTERFIELD, WOODS, and WRIGHT), A., 1132.
- s*-Di- α -phenylethyldihydrazine, and its derivatives (SCHULZE and LOCHTE), A., 608.
- $\beta\gamma$ -Diphenylethylmalonic acid, α -bromo- γ -nitro-, and γ -nitro-, esters (KÖHLER and BARRETT), A., 849.
- 1:2-Di- α -phenylethyl-4-phenylsemicarbazide (SCHULZE and LOCHTE), A., 608.
- 1:2-Di- α -phenylethyl-4-phenylurazole (SCHULZE and LOCHTE), A., 608.
- Diphenylethylpropylphosphonium salts (MEISENHEIMER), A., 1237.
- $\alpha\beta$ -Diphenylethylsulphonic acid (LEVENE and MIKESKA), A., 46.
- Diphenylfulgide, comparison between dibenzylidenethiodiglycolic anhydride and (STOBBE, LJUNGREN, and FREYBERG), A., 403.
- Diphenylglycidic acid, esters, action of magnesium organic compounds on (BARDON and RAMART), A., 950.
- 2:5-Diphenyl-4-glyoxalidone-2-carboxylic acid, and its ethyl ester (GOLDSCHMIDT and BEUSCHEL), A., 607.
- Diphenylcyclohexylacetaldehyde, and its derivatives (DANILOV and VENUS-DANILOVA), A., 520.

- α -Diphenyl- β -cyclohexylethan- β -one (DANILOV and VENUS-DANILOVA), A., 520.
- 2:6-Diphenyl-4-*p*-hydroxyphenylpyrylium perchlorate (DILTHEY, FRÖDE, and KOENEN), A., 1524.
- 4:6-Diphenyl-2-*o*-hydroxy-*p*-tolylpyridine (DILTHEY, FRÖDE, and KOENEN), A., 1254.
- 4:6-Diphenyl-2-*o*-hydroxy-*p*-tolylpyrylium salts and derivatives (DILTHEY, FRÖDE, and KOENEN), A., 1254.
- 3:5-Diphenylimino-2:4-diphenyltetrahydro-1:2:4-thiadiazole octa-bromide, and hexaiodide (HUNTER), A., 626.
- Diphenylindanylamine, and its hydrochloride (COURTOT and DONDELINGER), A., 59.
- Diphenylketipic acid, *di-p*-chloro-, and its derivatives (KARRER, GEHRCKENS, and HEUSS), A., 726.
- Diphenylmethane, *o*-chloro- (TSCHITSCHIBABIN), A., 159.
- di*hydroxy-, manufacture of hydrogenated derivatives of (CHEM. FABR. VORM. SCHERING), (P.), B., 720.
- 2:4-*di*hydroxy- (KLARMANN), A., 515.
- Diphenylmethane dyes (HUGEL), (P.), B., 149.
- Diphenylmethanedicarboxylic acids, *dichloro*-, and other di-halogen derivatives (WEIL), (P.), B., 8.
- 4:6-Diphenyl-2-*o*-methoxy-*p*-tolylpyrylium perchlorate (DILTHEY, FRÖDE, and KOENEN), A., 1254.
- Diphenylmethylallylphosphonium bromide (MEISENHEIMER), A., 1237.
- Diphenylmethylarsine, *p*-bromo- (HUNT and TURNER), A., 186.
- 2:3-Diphenyl-6-methylbenzo-1:4-pyrone (WITTIG, BANGERT, and RICHTER), A., 301.
- 2:4-Diphenyl-6-methylbenzopyrylium perchlorate (ZIEGLER, FRIES, and SALZER), A., 955.
- α -Diphenyl- γ -methylbutane- β -diol (LÉVY), A., 399.
- 2:2-Di(phenylmethyl)diphenyl, 2:2'-*di*hydroxy- (TSCHITSCHIBABIN and SERGEIEV), A., 610.
- 2:4-Diphenyl-6-methyl-3-ethylbenzopyrylium perchlorate (ZIEGLER, FRIES, and SALZER), A., 955.
- Diphenylmethyl ethyl ketone, and its semicarbazone (MAXIM), A., 837.
- Diphenylmethylglycolic acid, ethyl ester (LÉVY), A., 399.
- 2:4-Diphenyl-6-methyl-3-propylbenzopyrylium perchlorate (ZIEGLER, FRIES, and SALZER), A., 955.
- 2:4-Diphenyl-6-methyl-3-isopropylchromen-2-ol (ZIEGLER, FRIES, and SALZER), A., 955.
- 1:3-Diphenyl-5-methylpyrazolo picrato (v. AUWERS and MAUSS), A., 624.
- 1:3-Diphenyl-5-methylpyrazole-4-carboxylic acid, ethyl ester (v. AUWERS and MAUSS), A., 624.
- 1:5-Diphenyl-3-methylpyrazoline-4-carboxylic acid, and its ethyl ester (v. AUWERS and MAUSS), A., 624.
- 2:3-Diphenyl-5-methylquinoxaline, 7-nitro- (BORSCHKE and FESKE), A., 605.
- 2:3-Diphenyl-4-(α -naphthyl)- γ -chromene, and its derivatives (LÖWENBEIN and ROSENBAUM), A., 955.
- Diphenyl-naphthylmethoxyphosphorus *dichlorides* (BOYD and SMITH), A., 1161.
- Diphenyl-naphthylmethylphosphinic acids, and their dipotassium salts (BOYD and SMITH), A., 1161.
- $\alpha\beta$ -Diphenyl-(α -naphthyl)propan- β -ol (MCKENZIE and TATTERSALL), A., 65.
- Diphenyldinitrodiphenylosotriazine (GUHA and DE), A., 743.
- $\alpha\alpha$ -Diphenyloctane- $\alpha\beta$ -diol (NICOLLE), A., 383.
- $\alpha\alpha$ -Diphenyloctan- β -one, and its semicarbazone (NICOLLE), A., 383.
- 3:4-Diphenylisooxazole-5-carboxylic acid (KÖHLER and BARRETT), A., 849.
- 3:4-Diphenylisooxazolidine-5:5-dicarboxylic acid, 2-hydroxy-, ethyl ester, and its derivatives (KÖHLER and BARRETT), A., 849.
- 3:4-Diphenylisooxazoline-5:5-dicarboxylic acid, methyl ester (KÖHLER and BARRETT), A., 849.
- 3:4-Diphenylisooxazoline-oxide-5:5-dicarboxylic acid, esters (KÖHLER and BARRETT), A., 849.
- Diphenylphosphoric acid, metallic salts (ZETSCHE and NACIMANN), A., 1242.
- Diphenylphthalide, absorption spectrum of (ORNDORFF, GIBBS, and McNULTY), A., 884.
- $\beta\gamma$ -Diphenylpropaldehyde hydrate, and its semicarbazone (STOERMER, THIER, and LAAGE), A., 160.
- $\alpha\gamma$ -Diphenylpropane, 2:4-*di*-, and 2:4:6-*tri*-hydroxy- (KLARMANN), A., 1135.
- r*-, and *l*- $\alpha\alpha$ -Diphenyl-*n*-propyl alcohol, *p*-amino- (MCKENZIE, ROGER, and WILLS), A., 610.
- $\alpha\gamma$ -Diphenylpropene, and its derivatives (STOERMER, THIER, and LAAGE), A., 160.
- Di- γ -phenylpropyldixanthyl (CONANT, SMALL, and SLOAN), A., 842.
- Diphenylpyrazole-4-carboxylic acids (v. AUWERS and MAUSS), A., 624.
- 4:6-Diphenyl-2-pyrone, and 3-bromo- (ARNDT and EISTERT), A., 74.
- Di-2-phenyl-4-quinolylcarbamide (JOHN, GROSSMANN, and FISCHL), A., 958.
- Di- β -2-phenyl-4-quinolylethylcarbamide (JOHN and GROSSMANN), A., 179.
- 2:4-Diphenylselenophen, mercurihalides and bromo-derivatives (BOGERT and ANDERSEN), A., 311.
- 2:4-Diphenylselenophentetrasulphonic acid (BOGERT and ANDERSEN), A., 311.
- Diphenylsilane, *dichloro*- (SCHWARZ and SEXAUER), A., 369.
- Diphenylsuccinonitrile (I. G. FARBENIND.), (P.), B., 899.
- Diphenyl-disulphide-*pp*'-diarsinic acid, and its barium salt (HEWITT, KING, and MURCH), A., 851.
- Diphenylsulphone-4-sulpho-3'-carboxylic acid, 2-amino-4'-hydroxy- (FARB. VORM. BAYER & Co.), (P.), B., 735.
- 2:6-Diphenyl-2:3:4:5-tetrahydrotetrazine (PONZIO and PEROLIO), A., 308.
- 1:4-Diphenyl-1:2:3:5-tetrazole, 1:2:4-*dibromo*-, and 1:2:4-*dibromo*-4-*m*-nitro- (CHATTAWAY and PARKES), A., 308.
- Diphenyltetrazolium chloride, amino-, and its derivatives (BAMBERGER, PADOVA, and ORMEROD), A., 416.
- hydroxide, 4-hydroxy-, and its salts (BAMBERGER, PADOVA, and ORMEROD), A., 416.
- Diphenyltetrazoliumbetaine, benzoylimino- and nitrosoimino-derivatives, and their salts (BAMBERGER, PADOVA, and ORMEROD), A., 416.
- s*-Diphenylthiocarbamide-4:4'-dicarboxylic acid, ethyl ester (GORI), A., 1037.
- Diphenylthiocarbazone, compounds of metals with, and their use in analysis (FISCHER), A., 491.
- Diphenylisothiohydantoin, condensation of aldehydes with (HANN and MARKLEY), A., 623.
- 5:7-Diphenylthiol-8-hydroxyquinoline, bis-2':5'-*dichloro*- (BROOKER and SMILES), A., 948.
- 2:4-Diphenylthiol-1-naphthol, chloro-derivatives (BROOKER and SMILES), A., 948.
- 4:6-Diphenyl-2-thiopyrone (ARNDT and EISTERT), A., 74.
- Diphenyl-*p*-tolylacetamidine (SEN and RAY), A., 606.
- Diphenyl-*p*-tolylmethoxyphosphorus *dichloride* (BOYD and SMITH), A., 1161.
- Diphenyl-*p*-tolylmethylphosphinic acid, and its dipotassium salt (BOYD and SMITH), A., 1161.
- $\alpha\gamma$ -Diphenyl- β -*p*-tolylpropane, 2:2':4:4':6:6'-*hexanitro*- (PASTAK), A., 392.
- Diphenyl-1:2:4-triazoles, 3-hydroxy- (BACKER and MULDER), A., 182.
- 1:5-Diphenyl-1:2:3-triazole-4-aldehyde, and its derivatives (ROJAHN and TRIELOV), A., 79.
- 1:5-Diphenyl-1:2:3-triazole-4-carboxylic acid, derivatives of (ROJAHN and TRIELOV), A., 79.
- Diphenyl- α -2:4:5-trimethoxyphenylethanes (SZÉKI), A., 285.
- $\alpha\beta$ -Diphenyl- β -2:4:5-trimethoxyphenylpropane (SZÉKI), A., 285.
- Diphenyl-4-acetylchloroamine (BELL, KENYON, and ROBINSON), A., 830.
- Diphenylphenylthiocarbamide, 4'-amino- (LE FÈVRE and TURNER), A., 1131.
- Diphenylthiocarbamic acid, 4'-amino-, derivatives of (LE FÈVRE and TURNER), A., 1131.
- s*-Diphenylthiocarbamide, *s-di*-4'-amino-, and its derivatives (PINTO), A., 607.
- 1:4-Di- β -phthalimidoethylpiperazine dihydrobromide (v. BRAUN, GOLL, and METZ), A., 1233.
- $\alpha\delta$ -Dipthalimido- γ -hydroxy- γ -butane- $\alpha\alpha$ -dicarboxylic acid, ethyl ester (TOMITA and FUKAGAWA), A., 1235.
- 1:4-Di- γ -phthalimidopropylpiperazine hydrobromide (v. BRAUN, GOLL, and METZ), A., 1233.
- Dipthalylbenzidine, nitration of (HODGSON), A., 1133.
- Diphtheria toxins (DERNBY), A., 759.
- preparation and properties of (WATSON and LANGSTAFF), A., 979.
- antigenic power of (NELIS), A., 1062.
- in Martin's broth (SCHMIDT), A., 97.
- Dipicryldicyanodiamidine (GUHA), A., 59.

- Dipicrylguanylcarbamide (GIUA), A., 59.
 $\alpha\alpha'$ -Dipiperidino adipic acid, and its derivatives (v. BRAUN and MÜNCH), A., 1122.
 $\alpha\alpha'$ -Dipiperidinoazelaic acid, ethyl ester, and its derivatives (v. BRAUN and MÜNCH), A., 1122.
Dipiperidino-9:10-dihydroanthracene, 1:4-dichloro- (BARNETT, MATTHEWS, and WILTSHIRE), A., 1030.
 $\gamma\gamma'$ -Dipiperidinodipropyl sulphide, and its picrate (BENNETT and HOCK), A., 146.
 $\alpha\gamma$ -Dipiperidino- β -2:4-dinitrophenylpropane (MANNICH and STEIN), A., 166.
 $\alpha\alpha$ -Dipiperidinopentane, and its salts (v. BRAUN, KÜHN, and GOLL), A., 1259.
Dipiperidyls, preparation of (RÜLKE and CLOTOFSKI), (P.), B., 464.
Dipiperonylisobutyrophenone, *di*- ω -6-nitro- (PERKIN, RAY, and ROBINSON), A., 733.
3:5-Diisopropenylpyridine (OPARINA), A., 844.
3:5-Dipropionyl-2:4-diethylpyrrole (KÜSTER, ERFLE, v. ROLL, and SCHILLER), A., 822.
1:4-Dipropionyl diglycyl-2:5-dimethylpiperazine, *a*-dibromo- (ABDERHALDEN and KOHL-EGGER), A., 1047.
1:4-Dipropionyl dileucyl-2:5-dimethylpiperazine, *a*-dibromo- (ABDERHALDEN and KOHL-EGGER), A., 1047.
Dipropionylmethane, and nitroso-, and their metallic derivatives (KÜSTER, ERFLE, v. ROLL, and SCHILLER), A., 821.
Dipropionylresorcinols (WITTIG and RICHTER), A., 302.
5:5-Dipropoxymethylbarbituric acid (HILL and KEACH), A., 271.
Dipropoxymethylmalonic acid, ethyl ester (HILL and KEACH), A., 271.
Dipropyl sulphide, $\gamma\gamma'$ -dichloro-, and $\gamma\gamma'$ -dihydroxy-, and their derivatives (BENNETT and HOCK), A., 146.
 $\alpha\alpha$ -Di-*n*-propyl sulphite (STRECKER and SPITALER), A., 1083.
Diisopropyl sulphide (v. BRAUN and MURJAHN), A., 829.
Di-*n*-propylamine, α -naphthylcarbamide from (FRENCH and WIRTEL), A., 830.
2-Di-*n*-propylamino-1:6:8-trinitronaphthalene (VAN DER KAM), A., 1240.
 α -Di-*n*-propylaminopropionic acid, derivatives of (v. BRAUN, LEISTNER, and MÜNCH), A., 1128.
3:3'-Di-*n*-propyl-5:5'-azo-1:2:4-triazole (REILLY and DRUMM), A., 962.
9:12-Dipropyl- $\Delta^{9,11}$ -diphensuccinadienes (BRAND and SASAKI), A., 157.
9:12-Dipropyldiphensuccindanes (BRAND and SASAKI), A., 157.
9:12-Dipropyldiphensuccindane-9:12-diols (BRAND and SASAKI), A., 157.
Diisopropyldixanthyl (CONANT, SMALL, and SLOAN), A., 842.
9:12-Dipropylidenediphensuccindanes (BRAND and SASAKI), A., 157.
 β -Diisopropylidenefructose, constitution and derivatives of (OHLE, KOLLER, and BEREND), A., 150.
Diisopropylidenegalactosyl- ζ -dimethylamine, and its methiodide (FREUDENBERG and SMEYKAL), A., 274.
Diisopropylidenegalacturonic acid, and its salts (OHLE and BEREND), A., 150.
Diisopropylideneglucose (LEVENE and MEYER), A., 1228.
 d -Diisopropylidenemannonic acid, potassium salt and lactone (OHLE and BEREND), A., 150.
 β -Diisopropylidenemethylfructose (OHLE, KOLLER, and BEREND), A., 150.
Dipropyl ketone, derivatives of (MATHUS and GIBON), A., 272.
Dipropylmethylsulphonium mercuri-iodide, dichloro- (BENNETT and HOCK), A., 146.
Diisopropylnorcholecarbinol, and its derivatives (WIELAND and JACOBI), A., 1139.
1:4-Dipropylpiperazine, *di*- γ -amino-, and its salts (v. BRAUN, GOLL, and METZ), A., 1233.
3:5-Diisopropylpyridine, and its salts (OPARINA), A., 844.
3:5-Diisopropylpyridineacetic acids (OPARINA), A., 844.
Dipropylresorcinol (KLARMANN), A., 1135.
Dipropylsulphone, $\gamma\gamma'$ -dichloro- (BENNETT and HOCK), A., 146.
Dipsacus arvensis, β -methylglucoside and scabioside in (WAT-TIEZ), A., 983.
Dipyridinium subhalides (WEITZ and FISCHER), A., 527.
4:4'-Dipyridylamine (KOENIGS, FRIEDRICH, and JURANY), A., 179.
4:4'-Dipyridylamine-2:6-dicarboxylic acid (KOENIGS, FRIEDRICH, and JURANY), A., 179.
4:4'-Dipyridylamine-2:6:2':6'-tetracarboxylic acid, and its salts (KOENIGS, FRIEDRICH, and JURANY), A., 179.
s-Di-2-pyridylcarbamide (SCHMID and BECKER), A., 845.
s-Di-2-pyridylthiocarbamide (SCHMID and BECKER), A., 845.
Dipyronine *G* (DÜTT), A., 831.
9:10-Di-1':2'-pyrroledihydroanthracene (MINGOIA), A., 1158.
Dipyrrolethanes, synthesis of (FISCHER and HALBIG), A., 621.
Dipyrrolylmethanes, synthesis of (FISCHER and HALBIG), A., 621.
Diquinolylmethane dyes (SCHEIBE and FISCHER), A., 527.
Di-2':2''-quinolyl-2:1-methylquinolylene methane, and its derivatives (SCHEIBE and FISCHER), A., 528.
Disaccharases, specificity of (LEIBOWITZ and MECHLINSKI), A., 865.
Disaccharides, constitution of (COOPER, HAWORTH, and PEAT), A., 602.
Disaccharide-glucoside, synthesis of a (HELPERICH, KLEIN, and SCHÄFER), A., 386.
Discharge pastes, containing hyposulphites (KUNZE), (P.), B., 786.
Diselenic-uronic acid (MEYER and KASPER), A., 925.
Disilane, triimino- (SCHWARZ and SEXAUER), A., 369.
Disinfectants (ERDÖL- u. KOHLE-VERWERTUNG A.-G. and ZERNIK), (P.), B., 30; (BRICK; GORDON), (P.), B., 998; (WHITLOCK), (P.), B., 1030.
manufacture of (VIDAL), (P.), B., 960.
from sulphite-cellulose waste lye (HILPERT), B., 222.
mercurial, treatment of seeds with (HILGENDORFF), B., 379.
commercial, determination of activity of (LÜERS and WEINFURTER), B., 470.
containing phenols and soap, analysis of (DI STEFANO), B., 221.
Disintegration of dry powders (PLAUSON), (P.), B., 305*.
of solids suspended in liquids, machine for (HURRELL), (P.), B., 223.
Disintegration apparatus (AUSTIN and AMER. CREOSOTING Co.; KENNEDY and HUNT), (P.), B., 648; (J. M. and J. C. MAC-LACHLAN), (P.), B., 808.
Disperse systems. See under Systems.
Dispersion, determination of degree of, from diffusion (AUERBACH), A., 122.
anomalous, and absorption of electric waves (MIZUSHIMA), A., 560, 778, 1082.
of excited gases (LADENBURG, KOPFERMANN, and CARST), A., 994.
rotatory (PATTERSON), A., 662; (LOWRY), A., 662, 886.
magnetic rotatory and electric double refraction (DE MALLEMAN), A., 887.
Dispersoids, fixation of methylene-blue by (FODOR and RIWLIN), A., 238.
Dispersoidology, investigations in (v. WEIMARN and AOKI; v. WEIMARN and KATAOKA; v. WEIMARN and OTSUKA; v. WEIMARN; v. WEIMARN and HORI), A., 576.
Dissociation, distribution equilibria and electromotive force in mixed liquids (SIEGLER), A., 577.
Dissociation constants of acids in presence of boric acid (BÖESEKEN and COOPS), A., 681.
of weak acids and bases (DHAR), A., 796.
of multivalent substances (SIMMS), A., 681.
Dissolving device (CZAPEK and WEINGAND), (P.), B., 305*.
 $\alpha\beta$ -Distearoylglycerolphosphoric acid, choline and colamine salts (GRÜN and LIMPÄCHER), A., 826, 827.
Disthene, specific heat of, at low temperatures (SIMON and ZEIDLER), A., 1103.
Distillation (SCHNEIBLE), (P.), B., 616*; (THERMAL INDUSTRIAL and CHEMICAL RESEARCH Co. and RIDER), (P.), B., 621.
and rectification (GAY), B., 223.
separation of liquid mixtures by (MERCK), (P.), B., 521*.
ebullition tube for (GERMANN and BIROSEL), A., 142.
under diminished pressure (DU BOIS), (P.), B., 176.
of bituminous substances at low temperature (KOHLENSCHIEDUNGES.), (P.), B., 38.
of carbonaceous materials (CATLIN and CATLIN SHALE PRODUCTS Co.), (P.), B., 148*; (GRIFFITHS), (P.), B., 264*; (SALERNI), (P.), B., 308; (FRÄNKEL; HERTEL), (P.), B., 350; (TRUMBLE), (P.), B., 572.
stimulation of (DESCHAMPS), (P.), B., 38.
of finely-divided material (WIEDEMANN), (P.), B., 573.
of fuel (HÉRENG), (P.), B., 38; ("ALLKOG" ALLGEM. KOHLENS-VERWERTUNG-GES.), (P.), B., 308; (MERZ & McLELLAN and WEEKS; PLASSMANN), (P.), B., 572; (DRAWE), (P.), B., 573.
with superheated steam (GAZ INDUSTRIEL), (P.), B., 351.

- Distillation of solid fuel (HAENNIG), (P.), B., 182.
 of heterogeneous ternary mixtures (BARBAUDY, A.), 578.
 of liquids (MELHARDT), (P.), B., 449.
 under high vacuum (ZIELEY PROCESSES CORP.), (P.), B., 525.
 of oil-bearing material (DE HERNANDEZ), (P.), B., 351.
 continuous (HESS), (P.), B., 176.
 destructive, laboratory apparatus for (NIELSEN and LAING), (P.), B., 4.
 drums for (SCHWELKOHLE KOHLENSCHWELUNGSGES. and YOUNG), (P.), B., 4.
 of carbonaceous materials (LAING and NIELSEN), (P.), B., 118; (STRUBEN), (P.), B., 523; (SUTCLIFFE and PURE COAL BRIQUETTES), (P.), B., 527*.
 of waste materials (ATKINSON and GARLAND), (P.), B., 396.
 fractional (MERCK), (P.), B., 176; (SOC. ANON. D'OUGRÉE-MARIHAYE), (P.), B., 473*; (LESLIE and GENIESSE), B., 615.
 of complex mixtures (SOC. ANON. D'OUGRÉE-MARIHAYE), (P.), B., 309.
 laboratory (PETERS and BAKER), B., 175.
 steam, of hydrocarbons and liquids immiscible with water (HOWARD, CLARK, and STANDARD DEVELOPMENT CO.), (P.), B., 814.
 vacuum, in presence of steam (GRIGNARD), (P.), B., 304.
 of mixed liquids (SCHMALENBACH), (P.), B., 968.
 Distillation apparatus (DONALD), (P.), B., 654; (MÜLLER; LOVELESS), A., 931.
 regulation of (SOC. DES CONDENSEURS DELAS), (P.), B., 647.
 combined spreading and scraping mechanism for (GRANT, and ILLINOIS ANTHRACITE CORP.), (P.), B., 345.
 for hydrocarbons (TRUMBLE), (P.), B., 700.
 for water (DAY), (P.), B., 78.
 columns (ROTHENBACH), (P.), B., 858.
 "bubbler" column (CLARKE and RAHRS), A., 1223.
 fractionating columns, calculations on (CARSWELL), B., 343.
 See also Condensers and Retorts.
 Disulphides, colour reaction for (WALKER), A., 194.
cis-Disulphidodiethylenediaminecobaltic acid, sodium salt (KLEMENT), A., 372.
cis-Disulphitoethylenediamine-*trans*-diamminocobaltic acid, ammonium salt (KLEMENT), A., 372.
 Distyryl ketone (*dibenzylideneacetone*), chloro-derivatives (ARNDT and NACHTWEY), A., 837.
 Distyryl ketones, amino-, acetyl derivatives, perchlorates of (DILTHEY and BERRES), A., 728.
 Ditoluridipropionic acid, and its salts (MORGAN and KELLET), A., 747.
 Diterpene, synthesis of a (ROBERTS), A., 72.
 Di-tetrahydrodianthranol (v. BRAUN and BAYER), A., 173.
 Di-2-1:2:3:4-tetrahydronaphthylheptamethylenediamine, and its salts (v. BRAUN, GOLL, and METZ), A., 1233.
 Di-2-1:2:3:4-tetrahydronaphthyltrimethylenediamine, and its dihydrobromide and dinitroso-compound (v. BRAUN, GOLL, and METZ), A., 1233.
 $\alpha\beta$ -Di-2-tetrahydroisquinolinolthane, and its salts (v. BRAUN, GOLL, and ZOBEL), A., 740.
 1:4-Dithian, identity of triethylene trisulphide and (RÂY and BOSE-RÂY), A., 1023.
 Dithionic acid. See under Sulphur.
 Di-*p*-toluidinobenzene, chlorodinitro- (BORSCHÉ and TRAUTNER), A., 390.
 5:8-Di-*p*-toluidinoquinizarin (FARBW. FORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 866.
 3:5-Ditoluidino-4:1:2-thiodiazole, and its *dibenzoate* (FROMM), A., 717.
 3:5-Di-*p*-toluidinotoluene, 2:6-dinitro- (BORSCHÉ and TRAUTNER), A., 391.
 Ditolyl. See Dimethyldiphenyl.
 Di-*m*-tolyl sulphide, 2:6:2':6'-tetranitro- (GIUA and PETRONIO), A., 62.
 Di-*p*-tolyl disulphide, 3:3'-dinitro- (BOGERT and ALLEN), A., 743.
 Ditolylacetamidines (SEN and RÂY), A., 606.
 Di-*p*-tolyl- $\beta\gamma$ -diamino-*n*-butanes, stereoisomeric (MORGAN, HICKINBOTTOM, and BARKER), A., 503.
 2:2'-Di-*p*-tolylazo-4:4'-dimethylazobenzene (CHARRIER, CRIPPA, and DANSI), A., 849.
p-Di-*p*-tolylbenzene (GOMBERG and PERNERT), A., 944.
 1:4-Di-*p*-tolyl-2:3-dimethylpiperazines, stereoisomeric, and their salts (MORGAN, HICKINBOTTOM, and BARKER), A., 503.
 Ditolylene dithionitrite (RHEINBOLDT), A., 819.
s-Di- α -tolylguanidine (SILESIA VEREIN CHEM. FABR.), (P.), B., 995.
 Di-*p*-tolylhydrazodithiodicarbonamide, and its derivatives (FROMM), A., 717.
 Di-*p*-tolylketipic acid, derivatives of (KARRER, GEHRCKENS, and HEUSS), A., 725.
 $\gamma\gamma'$ -Di-*p*-tolylxydiethyl sulphide (BENNETT and HOCK), A., 146.
 5:7-Di-*p*-tolylthiol-8-hydroxyquinoline (BROOKER and SMILES), A., 948.
 Di-*p*-tolylthiolphenylacetoneitrile (BROOKER and SMILES), A., 947.
 Di(trimethylglucosan) (IRVINE and OLDHAM), A., 154.
 Di- α -undecyl ketone (GRIGNARD and PERRICHON), A., 382.
 Diuresis, excretion of urea in (BOURQUIN and LAUGHTON), A., 636.
 after administration of sodium benzoate (BIGNARI), A., 90.
 Divarinal, hydroxy-. See *n*-Propylbenzene, 3:4:5-trihydroxy-.
 Divers, helium for (GAERTNER), B., 319.
 Divi divi liquor, fermentation of (CHOUDARY and YOGANANDAM), B., 925.
 2-streptoDivinylenefurfuraldehyde. See ϵ -2-Furylpentadienal.
 2-(ω -Divinyl)pyrrole, 2- ω -dicyano- (FISCHER and SCHUBERT), A., 737.
 Dixanthyls, substituted, dissociation of, into free radicals (CONANT and SMALL), A., 158; (CONANT, SMALL, and SLOAN), A., 842.
 Dixanthyllallantoic acid (FOSSE), A., 548.
 Di-*d*-xylosecarbamide monohydrate (HELPERICH and KOSCHE), A., 273.
 Di-*m*-5-xylyl ether, and its tetranitro-derivative (v. BRAUN and HAENSEL), A., 1143.
 Di-*m*-xylyldiacetylene (GRIGNARD and PERRICHON), A., 382.
 Dodecahydrophenoxazine. See Dicyclohexanemorpholine.
 Dodecahydroxanthene (v. BRAUN and BAYER), A., 1253.
 Dodecane, *am*-dibromo- (CHUIT), A., 499.
 Dodecane-*am*-dicarboxylic acid, dimethyl ester (CHUIT), A., 499.
 Dodecane-*am*-diol, and its diacetyl derivative (CHUIT), A., 499.
 cycloDodecane, and its semicarbazone (RUZICKA, STOLL, and SCHIENZ), A., 615.
 Dodecan- ϵ - η -ol, and its semicarbazone (NICOLLE), A., 383.
 $\Delta\alpha$ -Dodecinenitrile, and its amide (GRIGNARD and PERRICHON), 382.
n-Dodecoylacetone, and its copper salt (MORGAN and HOLMES), A., 148.
 Dodecylresorcinol (DOHME, COX, and MILLER), A., 838.
 Dodecylresorcinol (DOHME, COX, and MILLER), A., 838; (KLARMANN), A., 1135.
 Doebner's reaction (CIUSA and BARATTINI), A., 736.
 Doppler effect (KREFFT), A., 218.
 formula for (JAUNCEY), A., 333.
 Dogs, influence of histamine on intestinal secretion of (KOSKOWSKI), A., 319.
 nitrogen and sulphur metabolism in (FAY and MENDEL), A., 318.
 sulphur metabolism in (CALLOW and HELE; COOMBS and HELE), A., 862.
 depancreatised, effect of withdrawal of insulin on (CHAIKOFF, MACLEOD, MARKOWITZ, and SIMPSON), A., 643.
 Dogwood. See *Cornus florida*, and *sanguinea*.
 Dolerite powder, action of, on plant growth (BLANCK and ALLEN), B., 70.
 Dolomite, dissociation of (GARNETT), A., 587.
 thermal decomposition of (HEPVALL), A., 684.
 disintegration of, in soil (MACINTYRE and SHAW), B., 24.
 magnesia from (HENTON), B., 485.
 Dolphin oil (TSUJIMOTO), B., 636; (MARCELET), B., 677, 923.
 Dopes, antiknock action of (CALENDAR, KING, and SIMS), B., 618.
 aeroplane (DESCHENS), B., 248.
 Drain-pipes, cement, destruction of, in soil (NEHRINO), B., 709.
 Driers, preparation of (SEDLACZEK), B., 1020.
 cobalt lead, joint use of (WILBORN), B., 714.
 Drinking-water. See Potable water under Water.
 Drop, ideal, weight of the (HARKINS), A., 568.
Drosophila, production of carbon dioxide and duration of life of cultures of (NORTHROP), A., 314.
 Drugs, automatic continuous percolator for extraction of (RAT-TRAY), B., 802.

- Drugs, effect of, on the heart (SALANT and NADLER), A., 1273.
influence of lecithins on action of (LAVROV), A., 201.
cathartic, determination of anthraquinone derivatives in (BEAL and KATTI), B., 767.
insoluble, injectable solutions of (Soo. CHEM. IND. IN BASLE), (P.), B., 514*.
- Drums, rotary, for treating materials by air currents (FANTING), (P.), B., 520.
- Dryers (LARSSON and NORTON Co.), (P.), B., 144; (ILLINGWORTH and ILLINGWORTH CARBONIZATION Co.), (P.), B., 146; (BARDUCCI), (P.), B., 256; (SÖDERLUND, BOBERG, TESTRUP, and TECINO-CHEMICAL LABS.), (P.), B., 346*; (BARR and INTERNAT. AGRICULTURAL CORP.), (P.), B., 425; (WELCH), (P.), B., 426*; (READER), (P.), B., 472; (GERTZ and BARTLETT & SNOW Co.), (P.), B., 568; (SOHULTZ), (P.), B., 616; (BARKER), (P.), B., 728; (W. G. and F. R. SIMON), (P.), B., 967.
control of (WELCH), (P.), B., 567.
heating gases for use in (DARRAH), (P.), B., 345.
combined washers and, of centrifugal type (EDDY and CAMPBELL), (P.), B., 33.
for ceramic ware (STRAIGHT), (P.), B., 362.
for fuel (KREISINGER and COMBUSTION ENGINEERING CORP.), (P.), B., 117.
centrifugal (McKAY), (P.), B., 391.
cylindrical, for low temperatures (BRABACK), (P.), B., 935.
rotary (GETTINGS, BODMAN, and JOHNSTON), (P.), B., 34*; (SCRIVE), (P.), B., 114*, 145*; (KIRKUP, KIRKUP, and THOMPSON), (P.), B., 145*; (HARTY and MOORE), (P.), B., 256*; (HUME), (P.), B., 520; (PEZOLD; MILLER), (P.), B., 521; (REAVELL), (P.), B., 696*.
spray (MILKAL, LTD. and SIERRA), (P.), B., 297.
vacuum, separation of moisture from gases in (GEN. ENGINEERING Co. (RADCLIFFE) and TAYLOR), (P.), B., 113.
vertical (BAECHLER, KISER & Co.), (P.), B., 391.
- Drying, effect of, on physical properties of liquids (MALI), A., 117.
intensive, effect of, on inner equilibria (SMITS; SMITS, DE LIEFDE, SWART, and CLAASSEN), A., 1206.
process for (HARRIS and INDUSTRIAL DRYER CORP.), (P.), B., 81; (CREDO and LOUISVILLE DRYING MACHINERY Co.), (P.), B., 304; (THERMAL INDUSTRIAL and CHEMICAL RESEARCH Co. and RIDER), (P.), B., 621.
with solvent recovery (HARRIS and INDUSTRIAL DRYER CORP.), (P.), B., 113.
and apparatus (RIGBY), (P.), B., 521*.
mill for pulverisation and (INTERNAT. COMBUSTION ENGINEERING CORP.), (P.), B., 144.
measurement of relative humidity in (A.-G. F. ANILIN-FABR.), (P.), B., 34.
of agricultural or horticultural products (ELKINGTON), (P.), B., 211.
of clay products, etc. (BROWN), (P.), B., 362.
of coal and like substances (KOHLENVEREDLUNG GES. and GEISSEN), (P.), B., 428.
of materials (HARRIS and INDUSTRIAL DRYER CORP.), (P.), B., 113; (RHEINISCHE MASCHINENFABR.), (P.), B., 729; (FULLER FUEL Co. and JONES), (P.), B., 776*.
in bulk (DOBBELSTEIN), (P.), B., 904.
with waste furnace gases (JONES and FULLER FUEL Co.), (P.), B., 349.
of granular materials, apparatus for (ROSENCRAFTS and INT. COMBUSTION), (P.), B., 305*.
of moisture-containing materials (REDMAN and STURTEVANT Co.), (P.), B., 808.
of refractory materials (WILSON and LYKKEN), (P.), B., 362.
of road-making aggregates and other materials (WAKE), (P.), B., 392*.
of semi-liquid materials (HARRIS and INDUSTRIAL DRYER CORP.), (P.), B., 81.
- Drying apparatus (SHERBAN and BONNOT Co.), (P.), B., 2; (HARRIS and INDUSTRIAL DRYER CORP.), (P.), B., 81; (FULLER-LEHIGH Co. and SHERBAN), (P.), B., 81*; (DONALD), (P.), B., 654; (CANO; HATCH; MINTER), (P.), B., 808.
cylinders, doll-head bearings for (BULLEN), (P.), B., 145*.
steam-heated, draining of water from (ARNOT), (P.), B., 114*.
- Drying oils. See under Oils.
- Duck, wild, oil from skin and flesh of (HIROSE), B., 592.
- Dugong oil (IMPERIAL INSTITUTE), B., 199.
- Dulcin (*p*-phenetolecarbamide), degree of sweetness of (TÄUFEL and KLEMM), B., 106.
- Dulcitol, oxidation of (EVANS and HOLL), A., 149.
- Dumortierite, thermal dissociation of (BOWEN and WYCKOFF), A., 595.
- Duodenum, changes in blood after fistula of (WALTERS, KILGORE, and BOLLMAN), A., 637.
- Durain, composition of (SIMPKIN), B., 569.
- Duralumin, crystal structure of (ANDERSON), A., 562.
structure and ageing of (SACHS; LENNARTZ and HENNINGER; KROLL), B., 751.
- Durene, preparation of (SMITH and DOBROVOLNY), A., 719.
- Durene, diamino- and dinitro-, and their derivatives (SMITH and DOBROVOLNY), A., 729.
- Duroquinol, and its diacetate (SMITH and DOBROVOLNY), A., 729.
- Duroquinone, action of sodium alkyl malonates on (SMITH and DOBROVOLNY), A., 836.
dibromide (SMITH and DOBROVOLNY), A., 729.
- Dust or Dusts (GIBBS), B., 727.
catalytic activity of particles of (RICE), A., 917.
laying of, on roads (ALCHEMIN ALLGEM. CHEM. IND., and LICHTENSTERN), (P.), B., 409.
removal of (FORGAN-POTTS and CHADWICK), (P.), B., 808.
from gases or vapours (SALERNI), (P.), B., 304.
effect of turbulent air motion and of humidity on the stability of (DRINKER, THOMSON, and FINN), B., 726.
containers and means for emptying them (FARB. v. BAYER & Co.), (P.), B., 345.
separators (DAVIDSON & Co. and WHITMORE), (P.), B., 904.
photometric methods for study and determination of suspensions of (DRINKER, THOMSON, and FINN), B., 222.
determination of, in the atmosphere (D'ARSONVAL and BORDAS), B., 390.
centrifugal apparatus for separation of, from gases (KEITH & BLACKMAN Co. and KEITH), (P.), B., 904.
- Dvi-manganese (*rhenium*) (LORING and DRUCE), A., 12; (LORING), A., 338.
in manganese salts (CAMPBELL), A., 37; (DOLEJŠEK and HEYROVSKÝ), A., 37, 258; (HEYROVSKÝ; DRUCE), A., 138; (DOLEJŠEK, DRUCE, and HEYROVSKÝ), A., 227.
in native platinum (ZVJACINSTSEV, KORSUNSKI, and SELJAKOV), A., 934.
limits of absorption of K-series of (POLLAND), A., 1194.
separation of masurium and (TACKE), A., 112.
- Dye, $C_{18}H_{14}N_4$, from ethyl oxalate and magnesium pyrrol bromide (GODNEV and NARYSCHKIN), A., 183.
 $C_{19}H_{22}N_4I$, from 2-benzeneazomethylenc-1:3:3-trimethylindoline (ROSENHAUER and FEILNER), A., 1257.
- Dyes (COBENZL), B., 656.
manufacture of (BATES), (P.), B., 434; (BRITISH ALIZARINE Co. and BARNARD), (P.), B., 974.
finely subdivided (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 7.
to be chromed (Soo. CHEM. IND. IN BASLE), (P.), B., 702.
decay of fluorescence of solutions of (CAVIOLA), A., 335.
polarisation of fluorescence from solutions of (FRÖRLICH), A., 109.
phosphorescence of solid solutions of (PRINGSHEIM and VAVILOV), A., 885.
photo-sensitiveness of (KÖGEL and STEIGMANN), A., 693.
photochemical oxidation of, in presence of potassium dichromate (PLOTNIKOV), A., 253.
photochemical oxidation of leuco-bases of (CARROLL), A., 253.
solvents for (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 248.
distribution of, in various solvents (HOLLÓ and DEUTSCH), A., 1001.
viscosity and hydration of solutions of (LIEPATOV), A., 903.
adsorption of, by animal charcoal (ROSSI and BASINI), A., 1091.
spreading of, on water (FRUMKIN), A., 674.
diffusion of, into gelatin gels (MOMMSEN), A., 354.
oxidation of carbohydrates by (KNECHT and HIBBERT), A., 149.
testing of fastness of (CRUMMETT), B., 976.
on wool (HIRST), B., 43.
not fast to ironing (HALLER), B., 402.
fading of, in woollen and worsted fabrics (BARKER and HIRST), B., 976.
bleaching of, and sensitisation of silver halide emulsions (SHEPPARD), B., 467.

- Dyes, physical changes of, within dyed fibres (HALLER and RUPERTI), B., 316.
- chromium compounds of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 536.
- behaviour of hydrated chromic oxide towards (BURNS and WOOD), B., 625.
- action of, on sensitivity of silver bromide-gelatin (GORINI and DANTI), B., 219.
- behaviour of different starches towards (HUEBNER and VENKATARAMAN), B., 436.
- carriers for (MAISON BRETON, FICHOT & Co., SUCCESEURS, and CRUT), (P.), B., 451.
- emulsions of (GOEDECKE and COLLOISIL COLOUR Co.), (P.), B., 234.
- intermediates for (BOGERT and EVANS), B., 354; (BOGERT), (P.), B., 433; (BRITISH DYESTUFFS CORP., PERKIN and BUNBURY), (P.), B., 817.
- use of hyposulphites or sulphonylates in the removal of, from textile fibres (HOLLANDER and ROHM & HAAS), (P.), B., 914.
- penetration of, into plant cells (IRWIN; BROOKS), A., 647.
- effect of alkaloids and salts on staining of tissues with (BORNSTEIN and RÜTER), A., 316.
- used in paper-making, effect of, on animal life of water (HAEMPEL), B., 264.
- filterability of, in relation to excretion in the body (GROLLMAN), A., 317.
- from glycosino (LEHMSTEDT), (P.), B., 7.
- from ipeacacuanha alkaloids (PYMAN; PALKIN and WALES), A., 531.
- from peat (KOZAK, WEINBERGER, and PROKOPCZUK), (P.), B., 149.
- from β -phenylpyridinedicarboxylic acid (TEWARI and DUTT), A., 1153.
- for leather, brown (VOSSEN and GRASSELLI DYESTUFF CORP.), (P.), B., 185.
- for acetyl silk (SCOTTISH DYES, BECKETT, THOMAS, and TONKIN), (P.), B., 703.
- for silk (MATTHEWS and GLORIENT, INC.), (P.), B., 703.
- basic, fixation of (I. G. FARBERIND.), (P.), B., 873.
- action of, on lipins (SCHUMACHER), A., 324.
- dyeing with (EBERLEIN and COLLOISIL COLOUR Co.), (P.), B., 317.
- printing of coloured reserves on coloured grounds with (SCHEURER; MANGOLD), B., 581.
- sulphur compounds for making lakes from (A.-G. F. ANILIN-FABR.), (P.), B., 596.
- of Malachite Green series (CHEM. FABR. GRIESHEIM-ELEKTRO), (P.), B., 577, 626*.
- bluish-green, manufacture of (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 355*.
- and their colour lakes (STAEHLIN and GRASSELLI DYESTUFF CORP.), (P.), B., 658.
- coal-tar, detection of, in caramel (v. NOËL), B., 294.
- electric, hydrogen-ion concentration of (BALINT), A., 125.
- halogenated indigoid (SOC. CHEM. IND. IN BASLE), (P.), B., 1007*.
- mercury, therapeutic action of, on bacterial infections (RAIZISS, SEVERAC, and MOETSCH; WALKER and SEVERAC), A., 320.
- nitrosophenol, printing of, on fabrics (WENGRAF), B., 706.
- optically active (BRODE and ADAMS), A., 1031.
- organic, absorption and fluorescence of (MERRITT), A., 1193.
- for vulcanised rubber (DRAKELEY), B., 797.
- "polymethine" (KÖNIG), A., 522.
- sulphide, structure of (HODGSON), A., 511.
- manufacture of (FARB. v. BAYER & Co.), (P.), B., 121; (A.-G. F. ANILIN-FABR.), (P.), B., 311.
- brown, containing copper (FLACHSLAENDER, BURGESS, and DU PONT DE NEMOURS & Co.), (P.), B., 578.
- sulphur, manufacture of (ATAK), (P.), B., 234*; (SOC. CHEM. IND. IN BASLE), (P.), B., 866.
- fast to chlorine (KALLE & Co.), (P.), B., 149, 355*.
- green (SOC. CHEM. IND. IN BASLE), (P.), B., 266*.
- vat (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 266, 480*; (KALLE & Co.), (P.), B., 355*; (SOC. CHEM. IND. IN BASLE), (P.), B., 479; (ECKERT and GREUNE), (P.), B., 659*; (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 703*, 737.
- recent developments in (THOMSON), B., 397*.
- easily soluble preparations of (FARB. v. BAYER & Co.), (P.), B., 154, 357*.
- Dyes, vat, purification of (SOC. CHEM. IND. IN BASLE), (P.), B., 1007.
- production of pastes containing (BADISCHE-ANILIN- & SODA-FABR.), (P.), B., 355.
- stable printing pastes from (FARB. v. BAYER & Co.), (P.), B., 235.
- printing coloured discharges on indigo by means of (SUNDER and SOLBACH; MICHEL), B., 402.
- reduction of, to leuco-compounds (COMP. NAT. DE MATIÈRES COLORANTES ET MANUF. DE PROD. CHIM. DU NORD. RÉUNIES. ÉTABL. KUHLMANN), (P.), B., 868.
- derivatives of leuco-compounds of (JONES, WYLAM, MORTON, and MORTON SUNDOR FABRICS), (P.), B., 235, 403; (MORTON, JONES, WYLAM, HARRIS, WILSON, and MORTON SUNDOR FABRICS), (P.), B., 403.
- water-soluble derivatives of (MORTON, JONES, WYLAM, HARRIS, and MORTON SUNDOR FABRICS), (P.), B., 625; (SCOTTISH DYES, THOMAS, HARRIS, and WYLAM), (P.), B., 973.
- grey to black, manufacture of (I. G. FARBERIND.), (P.), B., 869.
- halogenated, of the anthraquinone series (I. G. FARBERIND.), (P.), B., 781*.
- violet, of the 2-thionaphthen-2-indoleindigo series (HERZ, BRUNNER, and GRASSELLI DYESTUFF CORP.), (P.), B., 816.
- piperidine as reagent for (DILTHEY and WIZINGER), A., 1163.
- analysis of, by electro-capillary measurements (KOPACZEWSKI), B., 353.
- detection of, in foods (SOEP), B., 847.
- determination of (NOLL), B., 942.
- determination of, spectrophotometrically (FRENCH), B., 354.
- Dye pastes (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 528*.
- Dyed materials, improvement of the fastness to rubbing of (CHEM. FABR. SCHMITZ), (P.), B., 154.
- Dyeing (DUISBERG, HENTRICH, and GRASSELLI DYESTUFF CORP.), (P.), B., 318*; (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 536.
- physics and chemistry of (MEYER), B., 316; (MEYER, SCHÜSTER, and BÜLOW), B., 483; (MEYER and FIKENTSCHER), B., 740.
- theory of (ELÖD), B., 316.
- mechanism of (BRODE and ADAMS), A., 1031.
- fifty years of (ROBBINS), B., 820.
- dry (LEVY and GIMBERG), (P.), B., 154.
- compounds for (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 271.
- influence on, of degree of dispersion of dyes in dye liquors (ROESTEL), B., 535.
- resists for use in (CLARKE and BROWN), (P.), B., 357.
- with Indigosol O (FRIEDLÄNDER), B., 783.
- with Naphthol AS, influence of after treatment on fastness to light of (KAYSER), B., 784.
- on artificial silks (LINT), B., 484.
- with sulphur dyes, prevention of bronzy shades in (KOSCHE), B., 783; (KÖÖX), B., 784.
- with vat dyes, chemistry of (BRASS and GAYLED), B., 627.
- of animal fibres and fabrics (WILKINSON), (P.), B., 11.
- fast shades on animal fibres (I. G. FARBERIND.), (P.), B., 785.
- batik, reserve pastes from algin for (KUNIG), B., 784.
- of cellulose acetate (BRITISH CELANESE, ELLIS, and GOLDTHORPE), (P.), B., 50; (BRITISH CELANESE and ELLIS), (P.), B., 87, 124, 741; (BRITISH DYESTUFFS CORP., PERKIN, and HOLLINS; BRITISH CELANESE, ELLIS, and GREEHALGH), (P.), B., 124; (HOLLIDAY & Co. and YOUNG; TEINTURERIE DE LA RIZE), (P.), B., 154; (CLAVEL), (P.), B., 235*; (BRITISH DYESTUFFS CORP., BADDILEY, SHEPHERD, SWANN, HILL, and LAWRIE), (P.), B., 317; (ELLIS, STEVENSON, CROFT, and AMER. CELLULOSE & CHEM. MANUF. Co.), (P.), B., 977*.
- in black shades (SILVER SPRINGS BLEACHING & DYEING Co.), (P.), B., 976.
- of cellulose acetate silk (KARTASCHOV), B., 49, 188; (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 536; (I. G. FARBERIND.), (P.), B., 785; (BRITISH DYESTUFFS CORP., HORSFALL, LAWRIE, HENDERSON, and HILL), (P.), B., 976.
- with insoluble colours (POKORNY), B., 1010.
- of cellulose esters (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 317, 741*.
- of cellulose esters and ethers (DUISBERG, HENTRICH, WEINAND, ZEH, and GRASSELLI DYESTUFF CORP.), (P.), B., 741.

Dyeing of cellulose esters and ethers and artificial silk (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING; BRITISH ALIZARINE CO. and BARNARD), (P.), B., 628; (MÜLLER and GRASSELLI DYESTUFF CORP.), (P.), B., 628*.

of cellulose ethers (EICHWEDE, FISCHER, and GRASSELLI CHEM. Co.), (P.), B., 1011.

of cellulose fibres (DURAND and HUGUENIN), (P.), B., 785.

of cellulose materials (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 1011.

of cellulose viscose silks (SANNER), (P.), B., 785.

of cotton, application of nitrobenzyl cellulose ethers to (PEACOCK), B., 270.

in brown shades (COMP. NAT. MAT. COL. ET MANUF. DE PROD. CHIM.), (P.), B., 538.

of immunised cotton (SANDÖZ CHEMICAL CO. and WOODHEAD), (P.), B., 270.

and coating of fabrics (TWO-TONE CORP. and MIJER), (P.), B., 976.

of furs (STEIN, AUSTIN, LIEBOWITZ, and STEIN FUR DYEING CO.), (P.), B., 189, 318.

of hanks (CALDWELL and BRITISH COTTON & WOOL DYERS' ASSOC.), (P.), B., 628*; (MISSY), (P.), B., 663.

of knitted and woven fabrics (CALLEBAUT and DE BLICQUY), (P.), B., 977.

of leather (KALLE & Co.), (P.), B., 11; (SALT), B., 153, 784; (McCANDLISH and SALT), B., 153; (VOSSEN and GRASSELLI DYESTUFF CORP.), (P.), B., 185; (CASSELLA & Co.), (P.), B., 318; (SALT and ÅSTRÖM), B., 784; (LAMB), (P.), B., 839.

of glove leather, mordant for (SIMONCINI), B., 49.

of materials for buttons, etc. (FLEMING), B., 535.

of materials with liquids (HARTIG), (P.), B., 786.

of non-denitrated nitrocellulose silk (MEYER, SCHUSTER, and BÜLOW), B., 483.

of silk (SEYER and STANDARD SILK DYEING CO.), (P.), B., 124.

black (SEYER and STANDARD SILK DYEING CO.), (P.), B., 124.

of artificial silk from cellulose derivatives (FARB. v. BAYER & Co.), (P.), B., 536.

of raw stock, apparatus for (HUSSONG DYEING MACHINE CO.), (P.), B., 741.

of textiles (DURAND & HUGUENIN, BADER, LOMBARD, SUNDER, and VAUCHER), (P.), B., 318*; (KNECHT and MÜLLER), (P.), B., 357; (TWO-TONE CORP. and MIJER), (P.), B., 741.

with basic dyes (EBERLEIN and COLLOISIL COLOUR CO.), B., 317.

wound on perforated bobbins (N. V. NEDERLANDSCHE KUNSTZIJDEFABR.), (P.), B., 317.

apparatus for (STAPLETON and STROUD), (P.), B., 317.

of union fabrics, Katanol W in (RUDOLPH), B., 484.

containing cellulose acetate silk (RUDOLPH), B., 484.

of vegetable fibres (CASSELLA & Co.), (P.), B., 536.

of wool (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 536, 785; (BEDFORD), (P.), B., 706.

after exposure to sunlight (v. BERGEN), B., 740.

with acid dyes (MEYER and FIKENTSCHER), B., 740.

with indigo (DURAND & HUGUENIN), (P.), B., 235; (PETERHAUSER), B., 535.

of wool and silk, theory of (PFEIFFER and ANGERN), B., 402.

of woollen piece goods, even (FAVRE; WAGNER), B., 122.

of yarn, apparatus for (FULD & HATCH KNITTING CO.), (P.), B., 357*; (HÖLTZING), (P.), B., 820.

in wound form (J. T. and J. BRANDWOOD), (P.), B., 189*.

Dyeing apparatus (THIES), (P.), B., 318*; (AMER. LAUNDRY MACHINERY CO.; MCCONNELL; J. & R. WHITAKER), (P.), B., 357*; (F. M. & G. W. MORTON), (P.), B., 536; (KIRCHNOFF), (P.), B., 873.

for hat bodies (BÖHM), (P.), B., 786.

for yarns in mass (RANDOMTEX DYEING MACHINE CORP.), (P.), B., 1011.

Dyeing machines (DEAN), (P.), B., 11*; (CADGENE), (P.), B., 87*; (RILEY), (P.), B., 945; (BELL and BUTTERWORTH & SONS CO.), (P.), B., 1011.

Dyeworks, clarification and decolorisation of waste water from (ULLMANN), (P.), B., 470.

Dynamite compositions (SWINT and DU PONT DE NEMOURS & Co.), (P.), B., 854.

Dysanallyte, crystal structure of (BARTH), A., 664;

E.

Ear, catalase activity of mucous membrane of (SOLLMANN and HOWARD), A., 1053.

human, fatty substances in (NAKAMICHI), A., 857.

Earth, age of the (HOLMES), A., 449.

Earths, extraction of manganese from (SOUVIRON), (P.), B., 889.

activated decolorising, neutralising action of, on acidified lubricating oils (ECKERT), B., 181.

bleaching, manufacture of, from clay (ERDWERKE MÜNCHEN LIETZENMAYER), (P.), B., 439.

diatomaceous. See Kieselguhr.

fuller's, utilisation of effluents from manufacture of (MAAG), (P.), B., 806.

spent, revivification of (HALL and TEXAS CO.), (P.), B., 120.

life of, used in the vapour-phase treatment of cracked distillates (MANDELBAUM and NISSON), B., 653.

activated (ECKART), B., 448.

Japanese acid, catalytic action of (INOUE), A., 1110, 1132, 1216.

rare (v. HEVESY), A., 111; (THOMPSON, HOLTON, and KREMERS), A., 489; (YNTEMA; HARRIS, YNTEMA, and HOPKINS), A., 780; (HARRIS and HOPKINS), A., 810.

ultra-violet spectra of (GARDINER), A., 774.

new X-ray lines in (LAPP, ROGERS, and HOPKINS), A., 1194.

absorption spectra of compounds of (BECQUEREL, ONNES, and DE HAAS), A., 659; (INOUE), A., 883.

absorption spectra of minerals of (BECQUEREL, ONNES, and DE HAAS), A., 14.

ionisation potentials of (ROLLA and PICCARDI), A., 769.

theory of colour of (YNTEMA), A., 780.

salts, magnetic susceptibility of solutions of (WILLIAMS), A., 567.

borates and phosphates of (CANNERY), A., 1112.

doubly chromates of alkali metals and (CAROBBI), A., 810.

reactions of "aluminon" with hydroxides of (MIDDLETON), A., 930.

lactates of (JANTSCH), A., 820.

isomorphism of molybdates of, with those of lead and the alkaline earths (ZAMBONINI and LEVI), A., 13, 228; (ZAMBONINI), A., 113.

oxides of, magnetic properties of (WILLIAMS), A., 567.

crystal structure of oxides of (GOLDSCHMIDT, ULRICH, and BARTH), A., 228.

double sulphates of alkali metals and (ZAMBONINI and CAROBBI), A., 137, 255; (ZAMBONINI and RESTAINO), A., 696, 1015.

of the cerium group, manufacture of metals of, in thin strips (WESTINGHOUSE LAMP CO.; MARDEN and RICH), (P.), B., 884.

Earthenware, decoration of (BOURNE and HEWITT), (P.), B., 747.

durable, manufacture of (OEXMANN), (P.), B., 918.

bodies, bacteria in (SCHÖBLIK), B., 877.

Ebullioscopic constants, calculation of (DE KOLOSOVSKI), A., 791, 1199.

Egonidine perbromides (LINDEMANN and HEINEMANN), A., 417.

Eclampsia, chemistry of blood in (STANDER and RADELET), A., 1271.

Ectropite, identity of bementite with (LARSEN), A., 709.

Eels, hydrolysis of esters by preparations of (NOYES, LORBERBLATT, and FALK), A., 1175.

Effluents, acid, biological purification of, contaminated with organic matter (BACH), B., 646.

contaminated with phenols (BACH), B., 646.

industrial, containing nitrogen, purification of (GIRARD), (P.), B., 774.

determination of absorbed oxygen and albuminoid ammonia in (JOHNSON), B., 726.

Eggs, preservation of (MERCK), (P.), B., 766.

effect of chemical preservation of, on stability of their vitamin contents (Tso), B., 338.

storage of (MORAN and PIQUÉ), B., 459.

preparation of lecithin from (BARRO), B., 564.

bromolecithins of yolk of (LEVENE and ROLF), A., 635.

hen's, constituents of, during incubation (VLADIMIROV; VLADIMIROV and SCHMIDT), A., 1268.

amino-acids in incubation of (SENDJU), A., 1052.

biochemistry of, during hatching (IZUMI), A., 857.

uncombined sugar in (GADASKIN), A., 972.

- Eggs, marine, hydrogen-ion concentration and oxidation-reduction potential in (J. and D. M. NEEDHAM), A., 194.
 preserved, estimation of decay in (SCHMID), B., 338.
 determination of unsaponifiable matter in (HERTWIG and BAILEY), B., 338.
- Egg-albumin. See under Albumin.
- Egg yolk, powdered, dispersion of (COBB and HUNT), B., 206.
- Egyptian materials, ancient (LUCAS), B., 903.
- n*-Eicosylacetone, and its copper salt (MORGAN and HOLMES), A., 148.
- Eisenbrucite (GAUBERT), A., 708.
- Ejectors, water-jet gas (SOKOLOV-WICHNEVSKY), (P.), B., 521*.
- Eka-caesium (LORING and DRUCE), A., 12; (LORING), A., 12, 338.
 spectrum of (LORING), A., 561.
- Eka-iodine (LORING and DRUCE), A., 12.
- α - and β -Eläostearic acids, salts and derivatives of (NAGEL and GROSS), A., 498.
- Elaidic acid, oxidation of, and its derivatives (HILDITCH), A., 938.
 thalious salt (WALTER), A., 712.
- Elasticity and melting point (ANDREWS), A., 462.
 coefficients (PRESS), A., 895.
- Elastin, hydrolysis of (ENGELAND), A., 54.
- Elastin stain, Weigert's, preparation of (HAYNES), A., 708.
- Electric adsorption. See under Adsorption.
- arc with single electrode (DAVIS and BURCH), A., 378.
 welding of oxidisable wires in (COATS), A., 931.
 conductivity of clouds dispersed from (WALMSLEY), A., 654.
 current transference at the cathode of (SLEPIAN), A., 552.
 physiological action of radiation from (MAYERSON, GUNTHER, and LAURENS), A., 319.
 low-voltage, with reversed electric field (ECKART and COMPTON), A., 1075.
- discharge, three-point effect in (WYNN-WILLIAMS), A., 331.
 long sparks in (TERADA and NAKAYA), A., 1069.
 devices for (BRITISH THOMSON-HOUSTON Co., FOUND, and LANGMUIR), (P.), B., 66*; (WESTERN ELECTRIC Co.), (P.), B., 98; (BELL TELEPHONE LABS.), (P.), B., 551; (BRITISH THOMSON-HOUSTON Co. and CHARLTON; BRITISH THOMSON-HOUSTON Co. and MULLANEY), (P.), B., 834.
- combustion of gases in (FINCH and COWEN), A., 690.
 in gases (FOSTER), A., 219; (DAUVILLIER), A., 330.
 in mixed gases, spectra of (KEYS and HOME), A., 765.
 in tubes of argon-nitrogen (CLARKSON), A., 107.
 autoelectronic (CUNRADI), A., 1069.
- electrodeless, in hydrogen (SCHLESINGER), A., 1189.
- high-vacuum arc, in hydrogen (NEWMAN), A., 1069.
- spark, in heterogeneous media (TERADA, NAKAYA, and YUMOTO), A., 653.
- apparatus for (HUTH GES. FÜR FUNKENTELEGRAFIE), (P.), B., 676.
- tubes, demonstration of phenomena in (KATSCH), A., 989.
 with rarefied atmospheres (ABADIE and COURTINES), (P.), B., 676.
- oxide cathodes for (N. V. PHILIPS' GLOEILAMPENFABR.), (P.), B., 757, 834.
- thermionic (EDISON SWAN ELECTRIC Co. and RADIO-RÖHREN-LAB. NICKEL), (P.), B., 284.
 coated filaments for (GEN. ELECTRIC Co. and SMITHELLS), (P.), B., 65.
 vacuum, cores for cathodes of (REEVE and WESTERN ELECTRIC Co.), (P.), B., 135.
- double refraction in colloids (BJÖRNSTÄHL), A., 994.
- furnaces. See under Furnaces.
- incandescence bodies, deposition of chemical compounds on (N.V. PHILIPS' GLOEILAMPENFABR.), (P.), B., 285.
- lamps, leading-in wire for (FRIEDERICH and GEN. ELECTRIC Co.), (P.), B., 676; (METAL & THERMIT CORP. and SCHWARTZ), (P.), B., 757.
- coating of bulbs of (WHITMORE, FERGUSON, and WESTINGHOUSE LAMP Co.), (P.), B., 498*.
- filaments for (FONDA and GEN. ELECTRIC Co.), (P.), B., 498*.
- rare metallic oxides for (HEANY), (P.), B., 834.
- coating of internal metal parts of (ELEKTRISCHE GLÜHLAMP-FABR. "WATT"), (P.), B., 757.
- arc, electrodes for (GEN. ELECTRIC Co., SINGLETON, and HARE), (P.), B., 413.
- Electric lamps, gas-filled (GEN. ELECTRIC Co. and PATENT-TREUHAND-GES. F. ELEKT. GLÜHLAMPEN), (P.), B., 445.
 incandescence (DE GRAAFF, LELY, and GEN. ELECTRIC Co.), (P.), B., 19*; (CACHEMAILLE), (P.), B., 65; (FONDA and GEN. ELECTRIC Co.), (P.), B., 135*; (BRITISH THOMSON-HOUSTON Co. and FONDA), (P.), B., 413; (MYERS and WESTINGHOUSE LAMP Co.), (P.), B., 446.
 metallic filaments for (N.V. PHILIPS' GLOEILAMPENFABR.), (P.), B., 18, 445; (NEUE GLÜHLAMPEN-GES. and HAUSCHILD), (P.), B., 1019.
 deposition of hafnium and zirconium upon filaments of (N.V. PHILIPS' GLOEILAMPENFABR.), (P.), B., 886.
 electric resistance for (GEN. ELECTRIC Co. and SMITHELLS), (P.), B., 793.
 cold exhaustion of (GUSTIN and WESTINGHOUSE LAMP Co.), (P.), B., 551.
 decoration of (HADNAGY and DE CHRISTIAN), (P.), B., 922.
 inside frosting of (PIPKIN), B., 833.
 device for (FONDA and GEN. ELECTRIC Co.), (P.), B., 834.
 quartz mercury vapour (MENSING), (P.), B., 498*.
 standard pyrometric, influence of external temperature on temperature of (RIBAUD), B., 303.
- lighting, fifty years of (LUCKIESH), B., 834.
- waves, dispersion and absorption of (MIZUSHIMA), A., 560, 886, 1082.
- welding (MURRAY), (P.), B., 835.
- wire, leading-in, for electric lamp bulbs, etc. (FRIEDERICH and GEN. ELECTRIC Co.), (P.), B., 676; (METAL & THERMIT CORP. and SCHWARTZ), (P.), B., 757.
- Electrical apparatus, preservation of oil used in (MASCHINENFABR. OERLIKON), (P.), B., 446.
 immersed in oil, prevention of formation of explosive gas mixtures in (BUCHHOLZ), (P.), B., 922.
 induction, for treatment of gases at high temperatures (FOURMENT), (P.), B., 712*.
- conductivity, theory of (REDLICH), A., 910.
 and dielectric constants (RAHINOVITSCH), A., 359, 360.
 in fused alloys (KREMAN and HRASOVEC), A., 477.
 in benzene solutions (JAKUBSOHN), A., 29.
 of biological fluids (BRIGAUDET and CARPENTIER), A., 762.
 of crystals and their aggregates (TAMMANN and VESZI), A., 461; (v. HEVESY), A., 667.
 of electrolytes containing dielectric spheres (ŚLAWINSKI), A., 1211.
 of mixtures of strong electrolytes (EGNÉR), A., 128.
 of liquids and solutions, accurate measurement of (MORGAN and LAMMERT), A., 686.
 of metals (PROCOPIU), A., 666.
 in mixtures, of methyl and ethyl alcohols (GOLDSCHMIDT and AARFLOT), A., 477.
 of fused salts (KLEMM and BILTZ; BILTZ and KLEMM), A., 607.
 of mixed salts (FISCHER), A., 478.
 of solid salts (PHIPPS, LANSING, and COOKE), A., 231.
 of salts in acetone (WALDEN, ULICH, and BUSCH), A., 1104.
- conductors (SATTELBERG), (P.), B., 19*.
- protective coatings on (MELLQUIST), (P.), B., 792*.
- removal of coatings from (BRITISH THOMSON-HOUSTON Co. and HOLLNAGEL), (P.), B., 134.
- insulated (TAYLOR and TAYLOR LABORATORIES), (P.), B., 835.
- contacts, alloy for (BELL TELEPHONE MANUF. Co.), (P.), B., 755.
- endosmosis, influence of electrolytes in (HEPBURN), A., 1100.
- heating elements (DRAHTLOSE HEIZ- & WIDERSTANDSKÖRPER F. ELEKTRIZITÄT), (P.), B., 135.
- insulators. See under Insulators.
- phenomena at interfaces (SEN), A., 573.
- precipitators (WEISKOPF and INTERNAT. PRECIPITATION Co.), B., 986.
- jarring of collecting electrodes in (METALLBANK & METALLURGISCHE GES.), (P.), B., 224*.
- resistances (SÜDDEUTS. TELEFON-APPARATE-, KABEL-, & DRAHTWERKE), (P.), B., 135.
- resistance element (OTTO and NEDERLANDSCHE TECH. HANDEL MAATS. "GIRO"), (P.), B., 446.
- resistance material (HOLMGREN), (P.), B., 98.
- resistors (CAPELLE), (P.), B., 60.

- Electricity, atomicity of, as a quantum theory law (KLEIN), A., 1078.
 frictional (VIEWEG), A., 770.
 Electricity meters, lubricating oils for (HOLDE and SCHACHENMEIER), B., 261.
 Electrification at interfaces (FREUNDLICH; SCHOFIELD), A., 1094.
 Electrocapillary curves, anomalous (LIEBREICH), A., 478.
 Electrochemical cells. See under Cells.
 oxidation (FICHTER), A., 807, 912.
 phenomena, periodic, at copper and silver anodes (HEDGES), A., 807.
 Electrochemistry, catalysis in (PERSON), A., 804.
 Electrodes, action of light on (AUDUBERT), A., 104.
 potentials of (HEYROVSKÝ), A., 687.
 emitting electrons (DUBILIER CONDENSER CO. and CAPICOTTO), (P.), B., 756.
 for arc lamps (GEN. ELECTRIC CO., SINGLETON, and HARE), (P.), B., 413.
 for decomposition apparatus (HOLMBOE), (P.), B., 757.
 for discharge tubes (KAYKO and GEN. ELECTRIC CO.), (P.), B., 19*.
 coating of (HARRIS and WESTERN ELECTRIC CO.), (P.), B., 65.
 for electric discharge tubes or lamps, coating of (SKAUFY), (P.), B., 332.
 for electrolytic apparatus (HOLMBOE), (P.), B., 284.
 removal of air bubbles from (MERSHON), (P.), B., 371.
 for use in electrolytic systems for protecting boilers (KIRKALDY), (P.), B., 650.
 for electrometric analysis with permanganate (LANG), A., 1116.
 furnace (LAVENE and ACHESON GRAPHITE CO.; NORSKE A./S. FOR ELEKTROKEM. IND.), (P.), B., 164.
 for arc furnaces (INT. GEN. ELECTRIC CO. and LÜDKE), (P.), B., 199*.
 for purification of gases (SIEMENS-SCHUCKERTWERKE), (P.), B., 412.
 for electrolytic evolution of gases (FARB. VORM. BAYER & CO.), (P.), B., 498.
 for precipitation of sulphuric acid mist (A.-G. F. ANILIN-FABR.), (P.), B., 125.
 aluminium, potential of, in pyridine solutions of its salts (MÜLLER), A., 1105.
 arc-welding (BRITISH THOMSON-HOUSTON CO. and WEED), (P.), B., 498.
 capillary, measurement of free energy of ions by (TAYLOR), A., 29.
 carbon (BECKER), B., 198.
 for producing ultra-violet rays (M. A. & V. ARNONE), (P.), B., 371.
 for primary cells using air-depolarisation (COMP. LORRAINE DE CHARBONS, LAMPES, & APP. ELECT.), (P.), B., 284.
 carbon arc, light emitted by (REY), B., 97.
 coated, for use in welding (HUME STEEL, LTD. and HUME; LLOYD, HILL, and WHITECROSS CO.; QUASI-ARC CO. and STROHMENGER), (P.), B., 984.
 discharge, for electrical gas purification (SIEMENS-SCHUCKERTWERKE and HEINRICH), (P.), B., 498.
 glass (GROSS and HALPERN), A., 129; (KERRIDGE), A., 1115.
 hydrogen (ETIENNE, VERAINE, and BOURGEOUX), A., 1067.
 influence of radium on (CENTNERSZWER and STRAUMANIS), A., 129.
 effect of pressure on potential of (TAMMANN and DIEKMANN), A., 360.
 precipitation studies with (BRITTON), A., 247.
 for physiological fluids (SCHMITT), A., 647.
 modified (SOLOVIEV), A., 374.
 simple (SIDERIS), A., 378.
 magnesium, use of, in spectroscopic analysis (DUREUIL), A., 593.
 manganese dioxide-permanganate (BROWN and TEFFT), A., 687.
 mercurous chloride, effect of temperature on potential of (KATSU), A., 1105.
 mercury, mercuric bromide, or chloride, effect of dilution on potentials of (BRODSKY), A., 247.
 dropping mercury (FRUMKIN), A., 1104.
 micro-, Lehmann (VLADIMIROV and GALYALO), A., 38.
 oxygen, effect of pressure on potential of (TAMMANN and RUNGE), A., 1104.
 Electrodes, platinised platinum, polarisation of, in ferro- and ferri-cyanide solutions (BECKER), A., 801.
 positive, of accumulators, active material for (BENNER and PREST-O-LITE CO.), (P.), B., 413.
 for electric batteries (SOC. ANON. LE CARBONE), (P.), B., 446.
 quinhydron (LINDERSTROM-LANG), A., 247; (MOZOLOVSKI and PARNAS), A., 647; (ACKERMANN), A., 813; (SMOLÍK), A., 927; (KÖHN), A., 1210.
 use of, in determination of alkaloids (WAGENER and MCGILL), A., 967.
 measurement of hydrogen-ion concentration by (HOCK; KOLTHOFF), A., 701.
 for measuring hydrogen-ion concentration in soils (BAVER), B., 467; (HISSINK and VAN DER SPEK), B., 558.
 use of, in determining hydrolysis of aluminium sulphate (PELLING), B., 125.
 reference, temperature coefficients of (BIRCHER and HOWELL), A., 247.
 self-baking, for electric furnaces (NORSKE A./S. FOR ELEKTROKEM. IND.), (P.), B., 499*.
 self-burning, material for (NORSKE A./S. FOR ELEKTROKEM. IND.), (P.), B., 284.
 V2 A-steel, in electro-analysis (SCHLEICHER and TOUSSAINT), B., 675.
 storage-battery (WEIR and PREST-O-LITE CO.), (P.), B., 371.
 welding (BRITISH THOMSON-HOUSTON CO. and GILLETTE), (P.), B., 412*.
 coating of (SIEMENS-SCHUCKERTWERKE), (P.), B., 245.
 zinc, polarisation of, in solutions of zinc salts (ALLMAND and COCKS), A., 912.
 Electrodeposition, fine-grained deposits in (VUILLEUMIER), B., 951.
 addition agents in (FUSEYA and MURATA), B., 950.
 of organic materials (SHEPPARD, EBERLIN, and EASTMAN KODAK CO.), (P.), B., 639.
 Electro-dialysis (REINER), A., 1205.
 in biochemistry (DHÉRÉ), A., 762, 1067.
 of serum proteins (ETTISCH and BECK; BECK), A., 751.
 Electrolyser with stirrer (BARTH), (P.), B., 413.
 Electrolysis of air or water (KELLY), (P.), B., 592.
 of alkali chlorides with horizontal diaphragms (ZELLSTOFF. FABR. WALDHOF and TAUSSIG), (P.), B., 592.
 of molten alloys (KREMANN, KRIEGHAMMER, and GRUBER-REHENBURG; KREMANN, KRIEGHAMMER, and TRÖSTER), A., 801; (KREMANN and BAUKOVAC), A., 801, 802; (KREMANN and DELLACHER; KREMANN and BAYER), A., 802.
 of aqueous solutions, formation of sols in (JIRSA), A., 1095.
 of fused masses (McNITT), (P.), B., 247*.
 of fused salts, apparatus for (ASHCROFT), (P.), B., 164*.
 anode-effect in (v. WARTENBERG, MANTHEY, and CONZELMANN), A., 912.
 production of gas by (WALSH), (P.), B., 677.
 of glass (FERGUSON and ELLIS; MULIGAN), A., 31.
 in organic chemistry (VANZETTI and MANCA), A., 713.
 alternating current, measurement of single potential and current in (FÜRTH), A., 1213.
 Electrolytes, theory of (ONSAGER), A., 906; (SAERENS), A., 1206.
 measurement of polarisation and resistance of (HARING), B., 497.
 potential of the surfaces of, relative to that of water (GARRISON), A., 130.
 for cells (PÖRSCHKE), (P.), B., 66*.
 containing dielectric spheres, conductivity of (SLAWINSKI), A., 1211.
 influence of boric acid on dissociation of (KOLTHOFF), A., 681.
 dielectric constants of solutions of (LATREY; WALDEN, ULICH, and WERNER), A., 350; (SACK), A., 456.
 dielectric constants of dilute aqueous solutions of (HELLMANN and ZAHN), A., 1193.
 specific heats of (ZWICKY), A., 462.
 thermodynamic properties of, in acetic acid and in liquid ammonia (WEBB), A., 1102.
 validity of Beer's law for dilute solutions of (v. HALBAN and EISENBRAND), A., 992.
 distribution of, between two liquid phases (VOSNESSENSKI and TSHUMUTOV), A., 783.
 adsorption of, by parchment (RENNY and REISENER), A., 1201.
 biochemistry of (HUGOUNENQ and LOISELLEUR), A., 1053.
 strong, theories of (SCATCHARD; NONHEBEL and HARTLEY), A., 1006.

- Electrolytes**, strong, conductivity of mixtures of (EGNÉR), A., 128.
 ionisation of (DAWSON and CARTER), A., 244.
 hydration of, and viscosity of their aqueous solutions (SUGDEN), A., 244.
 influence of the size of ions on the equation of state for (FRENKEL and FINKELSTEIN), A., 354.
 solubility of, in molten salts (GROSS), A., 350.
 energy of (ADAMS), A., 474.
 weak, ionisation of (MACINNES), A., 906.
 ionisation of, in aqueous-alcoholic solutions (MIZUTANI), A., 125.
- Electrolytic apparatus** (ALLAN and CLARKE), (P.), B., 835;
 (LAWACZEK), (P.), B., 985.
 connection apparatus, improved (STERN), A., 130.
 data, graphic representation of (NITZSCHMANN), B., 793.
 dissociation of electrolytes, influence of boric acid on (KOLTHOFF), A., 681.
 ions, theory of (LORENZ and WESTENBERGER), A., 360, 910, 1008.
 tanks, withdrawal of gases and vapours from (PFANHAUSER and LANGBEIN-PFANHAUSER-WERKE), (P.), B., 198.
- Electromagnetic induction heating** (BURCH, DAVIS, and METROPOLITAN-VICKERS ELECTRICAL CO.), (P.), B., 922.
 waves, action of, on atomic nuclei (BRUMMER), A., 221.
- Electromotive force of aqueous solutions of simple electrolytes** (HARNED and AKERLÖF), A., 796.
 in condensed systems (VAN LAAR and LORENZ), A., 478.
 dissociation, and distribution equilibria in mixed liquids (SIEGLER), A., 577.
 hydration and adsorption in production of (PFEIFFER), A., 1213.
 influence of the solvent on (BRODSKY), A., 688.
 in acid solutions (GORDON and WEBER), A., 30.
- Electrons**, theory of (REISSNER), A., 218.
 models of (THORNTON), A., 221.
 scattering of, in ionised gases (LANGMUIR), A., 3; (PENNING; DYMOND), A., 939.
 emission of, by metals (DROSTE; GENERAL ELECTRIC CO. and GOSSLING), A., 448; (BRIDGMAN; MENDENHALL), A., 449.
 photo-electric emission of, from metals (ROY), A., 1073.
 effect of temperature on thermionic and photoelectric emission of (HALL), A., 998.
 body with high emission of (LAISE and ELECTRON RELAY CO.), (P.), B., 198.
 material giving emission of (MARDEN and WESTINGHOUSE LAMP CO.), (P.), B., 834.
 motion of, in the field of a solid centre (BRONSTEIN), A., 331.
 motion of, in gases (TOWNSEND), A., 3.
 mobility of, in helium and hydrogen (WAHLIN), A., 653.
 collisions of (SMYTH; MOHLER), A., 4.
 excitation of spectra by collision of (ILERTZ), A., 331.
 collision between protons and (HUGHES and JAUNCEY), A., 221.
 production of radiation by collisions of (JAUNCEY and HUGHES), A., 451.
 polarisation of radiation excited by impact of (ELLETT, FOOTE, and MOHLER), A., 221.
 bombardment of metals with (KLEIN; RUDBERG; MOORE), A., 105.
 orbits of, from relativity (BALDWIN and JEFFERY), A., 657.
 transfer of energy from, to atoms (ZWICKY), A., 878.
 transfer of energy in collisions between (TOWNSEND and FOCKEN), A., 878.
 paths of (GÜNTHER-SCHULZE), A., 4.
 evaporation of (SCHOTTKY), A., 4.
 diffusion of (GLOCKLER), A., 448.
 passage of, through small apertures (BRETT and WHIDDINGTON), A., 1189.
 statics of phenomena involving (ROLLA and PICCARDI), A., 3.
 dispersion, number of (LONDON), A., 1191.
 free, action of radiation on (HULBERT), A., 881.
 high-velocity, energy of (WHITE), A., 989.
 ionised, mechanics of assemblies of (FOWLER), A., 553.
 rotating, electrodynamics of (FRENKEL), A., 773.
 secondary, emission of, from metals (PETRY), A., 989.
 slow, determination of the effective cross-section of gases towards (RUSCH), A., 989.
 spatially extended (FRÉDERICKSZ and ISAKSON), A., 1078.
 spinning (UHLENBECK and GOUDSMIT), A., 215; (SLATER; EDDINGTON; RICHARDSON; LINDEMANN; FRENKEL), A., 554; (RABI; BREIT; WENTZEL), A., 881; (KING), A., 991; (THOMAS), A., 1077.
- Electrons**, spinning, magnetic moments of (KRONIG), A., 653.
 and structure of spectra (BICHOWSKY and UREY), A., 447;
 (THOMAS; KRONIG), A., 448.
 Kaufmann's experiment with (JACKSON), A., 991.
 thermionic, effect of hydrogen atmosphere on velocity distribution among (DEL ROSARIO), A., 1189.
- Electron discharge devices**, filaments for (BELL TELEPHONE LABORATORIES), (P.), B., 922.
- Electroplating** (SWAIN and FRESTONE STEEL PRODUCTS CO.; SHOEMAKER), (P.), B., 163.
 difficulties in (BERNARD), B., 370.
 with cadmium (UDYLITE PROCESS CO., LOUTH, and YOUNG), (P.), B., 675*.
 of non-metallic articles (BROWN, MULLINIX, and RELIANCE GAUGE COLUMN CO.), (P.), B., 1019.
 on non-rusting iron (HAAAS and UNRUH), B., 242.
 baths, for obtaining deposits of varying thickness (WURTEMBERGISCHE METALLWARENFABR. and WOLF; WURTEMBERGISCHE METALLWARENFABR., WOLF, and BAUER), (P.), B., 757.
 non-poisonous (HALLA), (P.), B., 197.
- Electropy** (KARCZAG), A., 797.
 influence of hydrogen-ion concentration on (BÁLINT), A., 125.
- Element of atomic number 61** (HARRIS, YNTEMA, and HOPKINS; BRAUNER), A., 780; (HARRIS and HOPKINS), A., 810.
 X-ray spectrum of (LAPP, ROGERS, and HOPKINS; ROLLA and FERNANDES), A., 1083.
 of atomic number 75, occurrence of, in manganese salts (DOLEŽEK and HEYROVSKÝ; CAMPBELL), A., 37; (HEYROVSKÝ; DRUCE), A., 138.
 limits of absorption of K-series of (POLLAND), A., 1194.
- Elements**, structure of (BEDREAG), A., 7.
 electronic structure of, in relation to chemical properties (LUX), A., 995.
 geochemical distribution of (GOLDSCHMIDT, ULRICH, and BARTH), A., 228.
 classification of (PIUTTI), A., 221.
 properties of, in relation to a modified periodic system (v. ANTOPOV), A., 773.
 energy levels and critical potentials of (STONER), A., 773.
 adsorption and emission of radiation by (LORING), A., 561.
 cathodic sputtering of, in hydrogen (GÜNTHER-SCHULZE), A., 693.
 artificial disintegration of (CHADWICK), A., 1191.
 transmutation of (DAVIES and HORTON), A., 221; (SMITS), A., 554.
 periodicity in properties of alkyl compounds of (v. GROSSE), A., 555.
 of atomic numbers 75, 85, 87, and 93, forecasting of (LORING and DRUCE), A., 12; (LORING), A., 227.
 of the first transition group, atomic structure of (BOSE), A., 106.
 copper to lanthanum, X-ray spectra of (COSTER and MÜLDER), A., 987.
 of the iron series, spectra of (CATALÁN), A., 1.
 scandium to nickel, atomic structure of (SAMUEL and MARKOWICZ), A., 881.
 tin to hafnium, K-emission spectra of (CORK and STEPHENSON), A., 651.
 new (LORING), A., 780.
 detection of, from transmutation of elements (PETTERSSON), A., 1223.
 non-metallic, dielectric constants of, in relation to other physical properties (ADDENBROOKE), A., 225.
 radioactive. See Radioactive elements.
- Elemol**, and its derivatives (RUZICKA and PFEIFFER), A., 1148.
- Elm**. See *Ulmus campestris*.
- Elodea canadensis**, effect of acetaldehyde on carbohydrate content of (SABALITSCHKA and WEIDLING), A., 1182.
 polymerisation of formaldehyde by (SABALITSCHKA and WEIDLING), A., 871.
- Elutriation apparatus**, Wiegner's (GESSNER), A., 377.
- Embryos** (VLADIMIROV; VLADIMIROV and SCHMIDT), A., 1268.
 -glycolysis of tissues of (NEGELIN), A., 426.
- Emeralds**, synthetic (RIERA), (P.), B., 586.
- Emery cloth**, manufacture of (KLEIN and BROWN), (P.), B., 948.
- Emetamine**, constitution of (PYMAN), A., 531.
- Emulsification** (STAMM and KRAEMER), A., 792.
 and interfacial tension (HARKINS and ZOLLMAN), A., 239.
 of solids suspended in liquids, machines for (HURRELL), (P.), B., 223.

- Emulsification apparatus** (MCGOUGHAN and HUNTER), (P.), B., 904.
- Emulsifiers**, effect of, on the acid hydrolysis of esters (SMITH), A., 23.
- preparation of, from castor oil (AUBRY), B., 286.
- from eggs (EPSTEIN), (P.), B., 896.
- Emulsin**, action of, on amygdalin (ROSENTHALER), A., 202.
- enzymes of (JOSEPHSON), A., 321, 640.
- almond, action of, on *l*-arabinose (BRIDEL and BÉGUIN), A., 501.
- Emulsions** (MORRELL), (P.), B., 231.
- formation and creaming capacity of (WOODMAN), B., 139.
- manufacture of (HERZOG), (P.), B., 136*; (BILLINGHAME), (P.), B., 655; (POTTS and DOUGLAS PECTIN CORP.), (P.), B., 721.
- resolution of (AYRES and SHARPLES SPECIALTY CO.), (P.), B., 178*; (ZOU and CELITE CO.; LEEPER and AMER. DEMULSIFYING CO.), (P.), B., 353.
- influence of ions on inversion of (GHOSH and DHAR), A., 471.
- aqueous, preparation of (MERCK and EICHMOLZ), (P.), B., 852.
- asphalt, preparation of, from Mexican crude oil emulsions (DE KADT), B., 620.
- bituminous (MACKAY), (P.), B., 15; (WAILES DOVE BITUMASTIO and SHAW; KIRSCHBRAUN), (P.), B., 91*; (HAY), (P.), B., 120, 409, 632; (ASPHALT COLD MIX and LEVY), (P.), B., 363; (KIRSCHBRAUN; HAY and ASPHALT COLD MIX), (P.), B., 479*; (HUTTON and FULTON), (P.), B., 632; (LEVY; BRAUN and HAY), (P.), B., 748.
- for treating roads (MCGIVERN, FOSTER & Co. and SWIFT), (P.), B., 587.
- non-adhesive (KIRSCHBRAUN), (P.), B., 276.
- chromatic (SOGANI), A., 336.
- oil, dehydration of (MEREDITH and PETROLEUM RECTIFYING CO.), (P.), B., 85; (EDDY and PETROLEUM RECTIFYING CO.), (P.), B., 147; (GIRVIN and PETROLEUM RECTIFYING CO.), (P.), B., 148; (CAMERON and SIMPLEX REFINING CO.), (P.), B., 431*; (HALLORAN and STANDARD OIL CO.), (P.), B., 864.
- permanent, manufacture of (SOC. CHEM. IND. IN BASLE), (P.), B., 200.
- oil-soap, critical points of emulsification in (KYSER and VILBRANDT), B., 795.
- petroleum, breaking of (GATES, and STANDARD OIL CO.), (P.), B., 478; (DE GROOTE, and BARNICKEL & Co.), (P.), B., 908; (WALKER, and DOHERTY RESEARCH CO.), (P.), B., 941.
- treatment of (DE GROOTE, and BARNICKEL & Co.), (P.), B., 701; (DE GROOTE, ADAMS, and BARNICKEL & Co.; DE GROOTE, KEISER, and BARNICKEL & Co.), (P.), B., 973.
- photographic. See under Photographic.
- tar bitumen (MONTGOMERIE), (P.), B., 148.
- separation of (DE BREV, and N. V. BATAAFSCHE PETROLEUM MAATSCH.), (P.), B., 525.
- Enamels**, production of (SOMMER, GROTH, and CHEM. WERKE AUVERGES), (P.), B., 90*.
- clays for (BOEKER), B., 917.
- production of opacity in (KRETZER), (P.), B., 129; (VER. CHEM. FABR. KREIDL, HELLER & Co.), (P.), B., 542.
- manufacture of opacifiers for (KREIDL), (P.), B., 323.
- determination of cross-bending strength of (DANIELSON and LINDEMANN), B., 158.
- containing antimony compounds, use of, for cooking utensils (SVAOR), B., 192.
- lead-free (TOTOT-GIBARU), (P.), B., 323, 879.
- red (PATENT-TREUHAND GES. F. ELEKTR. GLÜHLAMPEN, and NACHOD), (P.), B., 275.
- sheet steel (WOLFRAM and HARRISON), B., 128.
- Enamel coatings on metal articles** (AUGER), (P.), B., 586.
- Enamel frits**, opacity phenomena in (OTREMBA), B., 542.
- Enamel pickling solutions**, chemical control of (SWEELY), B., 917.
- Enamelled objects**, manufacture of (DAVIDSEN), (P.), B., 542.
- ware, manufacture of (TRAUBE), (P.), B., 90*.
- Enamelling of metal articles** (AUGER), (P.), B., 918.
- Endothermic reactions**, irreversible (ARBUSOV), A., 805.
- Energy**, various forms of, in reversible and irreversible transformations (DENINA), A., 29.
- relation between temperature and, of gases (WERTHEIMER), A., 1088.
- and critical potentials of elements (STONER), A., 773.
- of strong electrolytes (ADAMS), A., 474.
- liberated in reactions compared with the energy quantum (MAYER), A., 484.
- Engines**, Diesel, oils of high phenol content for operation of (SPILKER), B., 570.
- gas, combustion in (DAVID), B., 617.
- gasoline, equilibrium in gases exhausted by (LOVELL and BOYD), B., 83.
- internal-combustion, effect of metallic sols in delaying detonation in (SIMS and MARDLES), B., 617.
- explosive reactions in relation to (CLERK), B., 617.
- petrol, explosions in (TIZARD), B., 618.
- Entropy**, definition of (PLANCK), A., 118.
- absolute value of (SAHA and SUR), A., 234.
- in relation to equation of state (VAN LAAR), A., 1088.
- of amorphous substances (SIMON and LANGE), A., 1000.
- of aqueous ions (LATIMER and BUFFINGTON), A., 1102.
- of ideal gases (VERSCHAFFELT), A., 463; (DE KOLOSOVSKI), A., 1198.
- rotation, of gases (SZÉLL), A., 570.
- Enzymes**, constitution of (NEUBERG), A., 1173.
- isolation of (WILLSTÄTTER), A., 321.
- from their solutions (ALTGELT, HOCHMUTH, and KALLE & Co.), (P.), B., 688*.
- purification of, by electrodialysis (FRICKE, FISCHER, and BORCHERS), A., 1058.
- action of light on (PINCUSSEN and SELIGSOHN), A., 432; (PINCUSSEN), A., 757.
- effect of radiation on (HUSSEY and THOMPSON), A., 202.
- action of radioactive rays and X-rays on (HUSSEY and THOMPSON), A., 202, 323.
- affinity of (v. EULER), A., 866.
- affinity constants of (v. EULER), A., 864.
- definiteness of activity of, and their preparations (v. EULER and JOSEPHSON), A., 640.
- activation and heat stability of (WOHLGEMUTH and SUGIHARA), A., 94.
- activation of, by ions (DOBY and HIBBARD), A., 1182.
- influence of arsenic and antimony compounds on activity of (SMORODINCEV and RIABOUSHINSKI), A., 433.
- effect of quinine compounds on activity of (SMORODINCEV and DANILOV), A., 94, 202.
- activities of, in bating materials (WILSON and MERRILL), B., 205.
- inactivation of (MYRBÄCK), A., 1174.
- regeneration of, inactivated by heating (BAKII and OPARIN), A., 1060.
- compounds of, with inactivators (MYRBÄCK), A., 1274.
- non-existence of various (KOSTYTSHEV), A., 756; (KLUYVER), A., 1274.
- bactericidal power of (GLASER and PRINZ), A., 1275.
- specificity of (BRIDEL), A., 756.
- colloidal behaviour of (VAN URK), A., 201.
- proteolysis of (KLEINMANN), A., 1276.
- action of hydrocyanic acid in metallic poisoning of (JACOBY), A., 1058.
- action of lime on (COLLETT), B., 454.
- concentrated preparations of (WAKSMAN and WOLF & Co.), (P.), B., 211.
- artificial glycolytic (KÖCHLING), A., 1059.
- coalescing, in *Hevea* latex (BELGRAVE), B., 288.
- of barley malt, separation of (PRINGSHEIM, GENIN, and PEREWOSKY), B., 104.
- fermentation, nomenclature of (NEUBERG and OFFENHEIMER), A., 323.
- pancreatic, rôle of, in bating (WILSON and MERRILL), B., 290.
- activities of, used in bating (WILSON and MERRILL), B., 290.
- proteolytic, action of (GIRARD), A., 757.
- hydrolysis by (WALDSCHMIDT-LEITZ, SCHÄFFNER, and GRASSMANN; WALDSCHMIDT-LEITZ and SIMONS), A., 1049.
- digestibility of deaminated proteins by (NAKASHIMA), A., 1060.
- in serum (FUCHS), A., 536; (FUCHS and v. FALKENHAUSEN), A., 1166.
- Schardinger's, action of (v. SZENT-GYÖRGYI), A., 867.
- hydrogen and oxygen transportases in (BACH and NIKOLAIEV), A., 542.
- of the skin (WOHLGEMUTH and KLOSTOCK; WOHLGEMUTH and NAKAMURA), A., 1060.
- determination of, nephelometrically (RONA and KLEINMANN), A., 543.
- separation of, from solutions (KALLE & Co.), (P.), B., 604.

Enzymes. See also :

- Amylase.
 Apozymase.
 Biolase.
 Carboligase.
 Catalase.
 Cellobiase.
 Co-zymase.
 Diastase.
 Emulsin.
 Erepsin.
 Esterase.
 Ferrase.
 Glycogenase.
 Hexosediphosphatase.
 Invertase.
 Laccase.
 Lichenase.
 Lipase.
 Luciferinase.
 Maltase.
 Myrosinase.
 Oxydases.
 Enzyme action (HEDIN), A., 756; (NOYES, LORBERBLATT, and FALK), A., 757, 1175; (NOYES, FALK, and BAUMANN), A., 757; (LORBERBLATT and FALK), A., 866.
 kinetics of (BRIGGS), A., 201.
 and antagonism of ions (HÖBER and SCHÜRMAYER), A., 322.
 relation between dispersion of substrate and (RONA and KLEIN-MANN), A., 977.
 Eosin, caesium compound of (DELAPLACE), A., 949.
 Eosin, iodo-, as indicator in titration of strychnine (DOTT), B., 419.
 Ephedrine, and its salts (CHOU), A., 1263.
 Epicamphorcarboxylic acid, and its esters, and their semicarbazones (MURAYAMA and TANAKA), A., 619.
trans-Epicatechin tetramethyl ether, dehydration of (FREUDENBERG, CARRARA, and COHN), A., 73.
 Epidote of Monte Rosso di Verra (CAPPANESE), A., 143.
 Epilepsy, acid-base equilibrium in (RAFFLIN), A., 637.
 blood changes in (WUTH), A., 1169.
 Equation, Planck-Einstein, derivation of (KATAYAMA), A., 881.
 van 't Hoff-Arrhenius temperature, nomogram for (RICHARDS), A., 1102.
 Equation of state, deduction of, from specific heat (SCHAMES), A., 234.
 relation between constants in, and surface tension (SCHUSTER), A., 342.
 and molecular association (CARROLL), A., 894.
 for strong electrolytes, influence of the size of ions on (FRENKEL and FINKELSTEIN), A., 354.
 of Berthelot and Wohl, validity of (HERZ), A., 342; (GEISSLER), A., 670.
 van der Waals' (MAASS and MENNIE), A., 233.
 for solids (VAN LAAR), A., 370, 890.
 Equilibria, theory of summation constancy in (REICHINSTEIN), A., 130.
 displacement of, by catalysis accelerators (SCHLESINGER), A., 1109.
 of binary liquids (ANGELESCU), A., 357.
 in binary systems (LINARD), A., 475; (RHEINOLDT and KIRCHHEISEN), A., 476.
 effect of pressure on (PUSHIN and GREBENSCHIKOV), A., 126; (PUSHIN), A., 245, 578.
 influence of substitution on (KREMANN, WEBER, and ZECHNER), A., 393; (KREMANN and ZECHNER), A., 394, 396.
 of heterogeneous systems (BUTLER), A., 908.
 in multicomponent systems, plane diagram of (LODOČNIKOV), A., 358.
 in systems with semipermeable membranes (SCHREINEMAKERS), A., 359, 578, 800, 1102, 1210.
 in the capillary layer (VAN DER WAALS), A., 578.
 chemical, active molecules in (ALEXÉEV), A., 680.
 inner, effect of intensive drying on (SMITS; SMITS, DE LIEFDE, SWART, and CLASSEN), A., 1206.
 thermochemical, from the kinetic and photochemical points of view (KUHN), A., 680.
 Erbium, ultra-violet spectrum of (GARDINER), A., 774.
 Erepsin, action of, on glycylglycine (v. EULER and JOSEPHSON), A., 1174.

- Erepsin in plant proteases (WILLSTÄTTER, GRASSMANN, and AMBROS), A., 543.
 intestinal (WALDSCHMIDT-LEITZ and SCHÄFFNER), A., 323.
 pancreatic (WALDSCHMIDT-LEITZ and HARTENECK), A., 323.
 Ergot, evaluation of preparations of (MASUDA; MAHN and REINERT), A., 328.
 production of alkaloid preparations from (CHEM. FABR. "NORGINE," STEIN, and WIECHOVSKI), (P.), B., 901.
 oxytocic substances of (FORST and WEESE), A., 1281.
 detection and evaluation of (TSCHIRCH), B., 848.
 separation of constituents of, and their pharmacology (FORST), A., 863.
 Ergotamine, content of, in ergot (MASUDA; MAHN and REINERT), A., 328.
 Ergotinine, transformation of, into ergotoxine in lactic acid solution (HAMET), A., 1173.
Eriostemon myoporoides, essential oil of (PENFOLD), B., 804.
Eruca sativa, oil from seeds of (SUDBOROUGH, WATSON, AYYAR, and MIRCHANDANI), B., 954.
 Erucic acid, thallos salt (WALTER), A., 712.
 glycerides of, in vegetable oils (SUDBOROUGH, WATSON, and AYYAR), B., 954.
 Erythrene, determination of, in gas mixtures (DOBROJANSKI), B., 394.
 Erythritol, heat capacity, entropy, and energy of (PARKS and ANDERSON), A., 784.
 new (PRÉVOST), A., 936.
i-Erythritol, crystal structure of (BURGERS), A., 339.
Erythroxylon monogynum, essential oil from the wood of (RAO, SHINTRE, and SIMONSEN), B., 1028.
 Esparto grass, treatment of (SOC. ANÓN. A.L.F.A. APPLICAZIONI LAVORAZIONI FIBRA ALFA E AFFINI), (P.), B., 1009.
 Esparto pulp, manufacture of, by the "Kecbra" process (CLARK), B., 781.
 Esters, production of, from amide acid sulphates (TRUSLER and ROESSLER & HASSLACHER CHEMICAL CO.), (P.), B., 609.
 production of mixtures of (CLAASEN), (P.), B., 769.
 infra-red absorption spectra of (SMITH and BOORD), A., 775.
 interaction of (VAN LOON), (P.), B., 553.
 effect of emulsifiers on the acid hydrolysis of (SMITH), A., 23.
 alkaline hydrolysis of (SMITH and OLSSON), A., 33; (GYNGELL), A., 1134.
 kinetics of lipase hydrolysis of (KNAFFL-LENZ), A., 132; (ARRHENIUS), A., 133; (NOCARI), A., 541.
 aliphatic, effectiveness of, in attracting flies (COOK), B., 518.
 asymmetric, hydrolysis of, by lipase (DAWSON, PLATT, and COHEN), A., 865.
 mixed, of fatty acids, preparation of (OELWERKE GERMANIA and NORMANN), (P.), B., 286.
 sparingly soluble, rate of hydrolysis of (SMITH and PATERSON), A., 580.
 Esterase, effect of temperature on action of (NOYES, LORBERBLATT, and FALK), A., 757.
 Etching reagents, action of (PORTEVIN), B., 327.
 metallographic (GROESBECK), B., 364.
 Oberhoffer's, for steel (HEINRICH and VOIGT), A., 707.
 Ethane, structure of (MARK and POHLAND), A., 227.
 vapour pressures and specific volumes of (LOOMIS and WALTERS), A., 999; (PORTER), A., 1000.
s-tetrabromo-, action of, on organic bases (FULTON), A., 304.
aaβ-tri- and *aaaβ*-tetra-chloro-, preparation of (PRINS), A., 268.
pentachloro-, molecular compounds of (WEISSENBERGER, SCHUSTER, and PAMER), A., 465.
 Ethane-^{1,2}H¹⁴-1-methylcyclohexane-3:5-dione-2-carboxylic acid, ethyl ester (FARMER and ROSS), A., 67.
 Ethanesulphonyl- α -fructose diisopropylidene ether (FREUDENBERG, BURKHART, and BRAUN), A., 601.
 γ -Ethanesulphonylglucose diisopropylidene ether (FREUDENBERG, BURKHART, and BRAUN), A., 601.
 Ethanolbisethylenediamminocupric iodide (MORGAN, CARTER, and HARRISON), A., 1008.
 Ether. See Ethyl ether.
 Ethers, preparation of, from aromatic alcohols (SENDERENS), A., 517.
 effect of substituents in the formation and reactions of (RAIFORD and COLBERT), A., 1242.
 infra-red absorption spectra of (SMITH and BOORD), A., 775.
 action of aluminium arsenide, selenide, and telluride on (NATTA), A., 1023.

- Ethers, aliphatic, preparation of (SENDERENS), A., 46.
 halogenated, reactivity of (NEHER and FLEECE), A., 1122.
 simple or mixed, of the fatty series, manufacture of (DISTILLERIES DES DEUX-SÈVRES), (P.), B., 768.
- Ethoxalylacetomethylamliide, and its nitroso-derivative and ferrous salts (KÜSTER and ERFLE), A., 713; (KÜSTER, ERFLE, v. ROLL, and SCHILLER), A., 821.
- Ethoxide, aluminium, manufacture of (CHEM. FABR. VORM. SCHERING), (P.), B., 691.
 sodium, action of, on *s*-trichloro-*di*- and *tri*-nitrobenzenes (VAN RIJN), A., 510.
- 2-Ethoxyanisole, 4:5-dinitro- (ALLAN and ROBINSON), A., 397.
- 4-Ethoxyanisole, nitro-derivatives (ROBINSON and SMITH), A., 397.
- 9-Ethoxyanthrone, 1:8-dichloro- (BARNETT, COOK, and MATTHEWS), A., 296.
- 2-Ethoxybenzaldehyde, 5-nitro-, semicarbazone (CHATTAWAY), A., 1242.
- p*-Ethoxybenzhydramine, and its optically active forms, and their hydrochlorides (TORRÈS y GONZÁLES), A., 396, 609.
- 2-Ethoxybenzoic acid, 5-nitro-, and its sodium salt (CHATTAWAY), A., 1242.
- 4-Ethoxybenzoic acid, 3-nitro- (KING and MURCH), A., 186; (KIEGL and HÖLLE), A., 720.
- 4-Ethoxybenzophenone, and 3-*mono*- and 3:5-*di*-bromo-, crystal structure of (JAEGER), A., 890.
 oxime of (TORRÈS y GONZÁLES), A., 396.
- ω -*p*-Ethoxybenzoylacetophenone (BRADLEY and ROBINSON), A., 1146.
- Ethoxybenzyl acetates, bromides, and ethyl ethers, nitro- (KIEGL and HÖLLE), A., 720.
- 2-Ethoxybenzyl alcohol, 5-nitro- (KIEGL and HÖLLE), A., 720.
- α -Ethoxybutan-8-ol, and its salts (DEWAELE), A., 1225.
- α - and β -Ethoxybutylenes, and their dibromides (LÉFINGLE), A., 935.
- β -Ethoxychalkone. See Phenyl β -ethoxystyryl ketone.
- 4'-Ethoxy-5:6:2'-3'-dibenzo- β -flavanone (TAMBOUR, PLATTNER, and ZACH), A., 733.
- 12-Ethoxy- Δ^{11} -diphenylsuccinadione, 9-chloro- (BRAND, MÜLLER, and KESSLER), A., 1135.
- β -Ethoxyethyl mercaptan, disulphide, and benzyl sulphide (ROJAHN and LEMME), A., 145.
- 9-Ethoxyfluorene (KIEGL, WINSCH, and WEIGELE), A., 612.
- α -Ethoxyhexan-8-ol (DEWAELE), A., 1225.
- 2-Ethoxycyclohexanone, and its *p*-nitrophenylhydrazones (BERGMANN and GIERTH), A., 728.
- 1-Ethoxy- Δ^1 -cyclohexene oxide (BERGMANN and GIERTH), A., 728.
- 2-Ethoxycyclohexyl bromide (BEDOS), A., 1238.
- 5-Ethoxyhydantoin-5-carboxylic acid, and its derivatives (BILTZ and LACHMANN), A., 1046.
- 10-Ethoxy-1-hydroxy-4:9-anthraquinone (GREEN), A., 840.
- 6-Ethoxy-4-keto-1:2:3:4-tetrahydroquinoline, and 3-chloro-, toluenesulphonyl derivatives (CLEMO and PERKIN), A., 76.
- Ethoxymethyl isopropyl ethers, α -chloro- γ -bromo-, α -chloro- γ -iodo-, and α -*di*-chloro- (BLANCHARD), A., 1123.
- 2-Ethoxymethylbenzimidazole (FARBENFABR. VORM. MEISTER, LUCIUS, and BRÜNING), (P.), B., 850.
- p*-Ethoxymethylbenzoic acid, esters and chloride of (CASE), A., 166.
- 2-Ethoxymethyl-5-ethoxybenzimidazole hydrochloride (FARBENFABR. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 850.
- 5-Ethoxymethyl-5-ethylbarbituric acid (HILL and KEACH), A., 271.
- Ethoxymethylethylmalonic acid, ethyl ester (HILL and KEACH), A., 271.
- 5-Ethoxymethyl-5-ethyl-2-thiobarbituric acid (HILL and KEACH), A., 271.
- α' -Ethoxy- α -methylglutaric acid, and its ethyl ester (GOSS and INGOLD), A., 289.
- 5-Ethoxy-1-methylhydantoin (BILTZ and KLEIN), A., 182.
- 5-Ethoxy-1-methylhydantoincarboxylic acid, ethyl ester (BILTZ and LACHMANN), A., 1046.
- 5-Ethoxy-1-methylhydantoinylamide, and its 3-acetyl derivative (BILTZ and LACHMANN), A., 1047.
- 5-Ethoxy-1-methylhydantoinylethylamide (BILTZ and LACHMANN), A., 1047.
- 5-Ethoxy-1-methylhydantoinmethylamide, 3-acetyl derivative (BILTZ and LACHMANN), A., 1047.
- Ethoxymethylmethyldiethylammonium iodide (STEWART and ASTON), A., 824.
- 5-Ethoxy-3-methyl-4-ethylpyrazole (BACKER and MEIJER), A., 741.
- 4-Ethoxy-1-methyl-2-*p*-methoxystyrylquinolinium iodide (TRÖGER and DUNKER), A., 526.
- α -Ethoxy-8-methylpentan-8-ol (DEWAELE), A., 1225.
- 5-Ethoxy-3-methyl-4-propylpyrazole (BACKER and MEIJER), A., 741.
- 5-Ethoxy-3-methylpyrazole, 4-nitro-, and its derivatives (BACKER and MEIJER), A., 741.
- ω -Ethoxymethylsuccinic acid, ethyl ester and amide (INGOLD, SHOPPEE, and THORPE), A., 939.
- 2-Ethoxy-1-naphthoic acid (FRIES and SCHIMMELSCHMIDT), A., 295.
- 2-Ethoxy-1-naphthoic formic acid (FRIES and SCHIMMELSCHMIDT), A., 295.
- 2-Ethoxy- α -naphthyl *p*-methoxystyryl ketone (FRIES and SCHIMMELSCHMIDT), A., 295.
- 2-Ethoxy- α -naphthyl styryl ketone (FRIES and SCHIMMELSCHMIDT), A., 295.
- 2-Ethoxy-1:6:8-trinitronaphthalene (VAN DER KAM), A., 1029.
- α -Ethoxypentan-8-ol (DEWAELE), A., 1225.
- 10-Ethoxy-9-phenylanthracene, 1:5-dichloro- (BARNETT and MATTHEWS), A., 618.
- 4-Ethoxyphenylarsinic acid, 3:5-dinitro- (DE LANGE), A., 279.
- p*-Ethoxyphenyl benzyl ketone, and its oxime (TORRÈS y GONZÁLES), A., 396, 610.
- p*-Ethoxyphenylbenzylmethylamine, and its hydrochloride (TORRÈS y GONZÁLES), A., 396.
- Ethoxy-2-phenyl-3- α -bromobenzylhydrindone (WEISS, GROBSTEIN, and SAUERMAN), A., 401.
- p*-Ethoxyphenylcarbamio acid chloral ethoxide ester (KALLE & Co. and SPRÖNGERTS), (P.), B., 901.
- 9-Ethoxy-9-phenyl-9:10-dihydroanthracene, 1:5-dichloro-10-nitro- (BARNETT and MATTHEWS), A., 618.
- dl*-2-Ethoxyphenylglycolic acid, 5-amino-, and 5-nitro-, and their salts and derivatives (CHATTAWAY), A., 1242.
- 6-Ethoxy-2-phenyl-1:3(4)-oxazine, and its picrate (KARRER and MIYAMICHI), A., 530.
- α -*p*-Ethoxyphenyl- β -phenylethylamine hydrochloride (TORRÈS y GONZÁLES), A., 610.
- α -Ethoxypropionic acid, β -chloro-, ethyl ester hydrochloride (HOUBEN and PRANKUCH), A., 1237.
- α -Ethoxypropionic acid, β -chloro-, derivatives of (HOUBEN and PRANKUCH), A., 1237.
- γ -Ethoxypropyl benzyl sulphide and sulphonyl (ROJAHN and LEMME), A., 145.
- mercaptan (ROJAHN and LEMME), A., 145.
- β -Ethoxystyrenes, stereochemistry of (DUFRAISSE and CHAUX), A., 940.
- 2-Ethoxytoluene, 3-iodo- (GOLDSCHMIDT and SCHÖN), A., 721.
- Ethoxytrimethylammonium hydroxide, ionisation of (NOYES), A., 154.
- Ethoxyurethanes (BLATSE and MILLOTIS), A., 943.
- Ethyl alcohol, preparation of, by means of bacteria (MEZZADROLI), B., 210.
 preparation of, from sulphite-cellulose waste liquors (SANDBERG and NILSSON), (P.), B., 894.
 manufacture of (PASCAL), B., 767.
 by fermentation (DAHLBERG and GREAT WESTERN SUGAR Co.), (P.), B., 563.
 production of, from molasses (DRESDENER PRESSHEFEN- & KORNSPIRITUS-FABR.), (P.), B., 211.
 production of, from pea-nut shells (DE BELSUNCKE), B., 448.
 from rice straw (TAKETOMI), B., 503.
 refining of (BARBET), (P.), B., 929*.
 conductivity measurements in mixtures of methyl alcohol and (GOLDSCHMIDT and AARFLOT), A., 477.
 dielectric constant and absorption of electric waves for (MIZUSHIMA), A., 778.
 density and refractive index of mixtures of benzene, water, and (BARBAUDY), A., 464.
 heat of fusion of (MITSUKURI and HARA), A., 785.
 partial pressures of aqueous solutions of (DOBSON), A., 235.
 viscosity of, at low temperatures (MIZUSHIMA), A., 1082.
 viscosity of solutions in (GOLDSCHMIDT and AARFLOT), A., 1005.
 equilibria of, with alkali and alkaline-earth salts (BONNELL and JONES), A., 357.
 equilibrium of benzene, water, and (BARBAUDY), A., 357.
 equilibrium of sodium sulphate, sulphuric acid, and (DUNNICLIFF, SIKKA, and HOON), A., 1102.
 adsorption by charcoal of mixtures of benzene and (TAYHORN and WYATT), A., 119, 340.

- Ethyl alcohol, drying of (DIEKMANN), A., 594.
 dehydration of (BARBAUDY), B., 107.
 impure (DISTILLERIES DES DEUX-SÈVRES), (P.), B., 604.
 dephlegmation of mixtures of water and (DEHNICKE), B., 508.
 photochemical oxidation of, in presence of potassium dichromate (SCHWARZ), A., 253.
 oxidation of, by hydrogen peroxide in presence of ferric salts (WALTON and CHRISTENSEN), A., 918.
 electropyrolytic decomposition of (MÜLLER), A., 43.
 action of, with fused alkali hydroxides (FRY and SCHULZE), A., 710.
 action of phosphorus pentasulphide on (PISCHTSCHIMUKA), A., 145.
 action of, on sensitivity of proteins to electrolytes (WELO), A., 1058.
 recovery of, in bakeries (ANDRUSIANI), (P.), B., 766.
 percentage of, in beer (SLATOR), B., 844.
 purification of fuels containing (SOC. DE RECHERCHES ET PERFECTIONNEMENTS IND.), (P.), B., 147.
 recovery of, from gases (BERL), (P.), B., 964.
 loss of, from spirits on keeping (LÜHRIG), B., 295.
 influence of, on growth of seedlings (PEARL and ALLEN), A., 438.
 iodoform reaction for (VAN DER LEE), A., 1125.
 determination of, volumetrically (CHABOT), B., 210.
 determination of, in chloroform (NEWCOMB), B., 172.
 determination of vapour of, in presence of ether vapour (v. SOMOGYI), B., 419.
 determination of, in distilled spirits (WILLIAMS), B., 845.
 determination of, in tinctures (GADAMER and NEUHOF), B., 214.
 determination and separation of, and its homologues (FISCHER and SCHMIDT), A., 632.
 separation of, from acetaldehyde or acetone (GOER and WAGNER), A., 189.
 Ethyl alcohol, absolute, manufacture of (GUINOT), B., 459; (STEFFENS and U.S. INDUSTRIAL ALCOHOL CO.), (P.), B., 643*; (CLAPP and U.S. INDUSTRIAL ALCOHOL CO.), (P.), B., 686.
 pure absolute, production of (LYONS and SMITH), B., 384.
 denatured (FULLER; FULLER and UNION CARBIDE & CARBON RESEARCH LABS.), (P.), B., 337; (FLORES), (P.), B., 765.
 industrial, from *Agave* pulp (BAUD), (P.), B., 642.
 Ethyl alcohol, β -amino- (*colamine*), salts of (GRÜN and LIMFÄCHER), A., 826.
 Ethyl barium phosphate, β -bromo- (ZETSCHE and NACHMANN), A., 46.
 bromide, explosion of mixtures of oxygen, nitrogen, and (JORISSEN and ONGKIEHONG), A., 690.
 β -*dibromovinyl* ether (NEHER and FLEECE), A., 1122.
 chloride, preparation of (CHEM. FABR. WEILER-TER MEER), (P.), B., 108; (CHEM. FABR. WEILER-TER MEER and SUIDA), (P.), B., 463.
 latent heat of vaporisation of (YATES), A., 1087.
 determination of, in chloroform (NEWCOMB), B., 172.
 Ethyl ether (PHELPS and ROWE), B., 461.
 catalytic preparation of (CLARK, GRAHAM, and WINTER), A., 45; (JATKAR and WATSON), B., 963.
 alum as catalyst for production of, from alcohol (JATKAR and WATSON), B., 565.
 apparatus for generating (LICHTENTHAELER), (P.), B., 692.
 recovery of, from gases (BERL), (P.), B., 964.
 dielectric constant and absorption of electric waves for (MIZUSHIMA), A., 778.
 heat of fusion of (MITSUKURI and HARA), A., 785.
 freezing-points of mixtures of benzene and (YAMAMURA), A., 1203.
 melting-point curve of mixtures of hydrochloric acid and (HIRAI), A., 908.
 influence of alkyl halides on inflammability of air and (NAGAI), A., 1106.
 explosion of mixtures of nitrous oxide and, with air or oxygen (JORISSEN and ONGKIEHONG), A., 1205.
 oxidation of, to oxalic acid in presence of uranyl nitrate (ROWELL and RUSSELL), A., 145.
 narcotic action of (NIJK), A., 863.
 action of, on blood-serum (BOOSE), A., 1057.
 determination of aldehyde in (PHELPS and ROWE), B., 461.
 determination of vapour of, in presence of alcohol vapour (v. SOMOGYI), B., 419.
 Ethyl ether, $\alpha\beta\beta$ -tetrabromo-, and α -chloro- $\beta\beta\beta$ -tribromo- (NEHER and FLEECE), A., 1122.
 Ethyl halides, complex salts of quinoline, mercuric halides, and (DEHN and COPE), A., 1258.
 hydrogen sulphate (HAMID, SINGH, and DUNNICLIFF), A., 711.
 manufacture of (DAMIENS, DE LOISY, and PIETTE), (P.), B., 692*.
 preparation of esters of (DAMIENS, DE LOISY, and PIETTE), (P.), B., 341*.
 α -iminocinnamyl ether and its hydrochloride and polymeride (HOUBEN and PFANKUCH), A., 951.
 iodide, preparation of, from ethyl *p*-toluenesulphonate (PEACOCK and MENON), A., 381.
 use of aluminium in preparation of (JONES and GREEN), A., 1224.
 reactions of, with sodium phenoxides in alcoholic solution (GOLDSWORTHY), A., 805.
 analysis of vapour of (HENDERSON), A., 984.
 mercaptan, formation of, from alcohol and phosphorus pentasulphide (PISCHTSCHIMUKA), A., 145.
 preparation of, from ethyl iodide (BROWN and SUYDER), A., 936.
 β -hydroxy-, diacetate (ROJAHN and LEMME), A., 145.
 selenomercaptan, derivatives of (SHAW and REID), A., 497.
 sulphate, catalysis of the preparation of (DAMIENS, DE LOISY, and PIETTE), (P.), B., 1029.
 thionitrite (LECHER and SEIFKEN), A., 819.
 Ethylacetoacetic acid, ethyl ester, carbomethoxyhydrazono (BACKE and MEYER), A., 305.
 9-Ethylacridine, 5- β -amino-, and its derivatives (JENSEN and HOWLAND), A., 959.
 β -hydroxy-, and its salts (HOMBERGER and JENSEN), A., 526.
 O-Ethylallophanic acid, *n*-butyl ester (BASTERFIELD, WOODS, and WRIGHT), A., 1132.
 Ethylamine, α -naphthylcarbamide from (FRENCH and WIRTEL), A., 830.
 Ethylaminoacetic acid, hydrochloride, and α -cyano-, ethyl ester (SCHEIDLER and NEFF), A., 943.
 α -Ethylaminoacetone nitrile hydrochloride (BILTZ and SLOTTA), A., 1046.
 3-Ethylamino-6-arsino-1:2-dihydroquinoxaline, 3-hydroxy- (LEWIS and BENT), A., 628.
p-Ethylaminobenzoic acid, *p*- β -hydroxy-, and its methyl ester and its derivatives (KIPRIJANOV), A., 950.
 α -Ethylaminoisobutyronitrile, and its hydrochloride (BILTZ and SLOTTA), A., 1046.
 Ethyl- β -aminoethylpiperidine, β' -amino-, and its salts (v. BRAUN, GOLL, and ZOBEL), A., 739.
 2-Ethylamino-1:6:8-trinitronaphthalene (VAN DER KAM), A., 1240.
 2-Ethylaminopyridine, $\beta\beta\beta$ -trichloro- α -hydroxy- (SCHMID and BECKER), A., 845.
 2-Ethylamino-1:2:3:4-tetrahydronaphthalene, β -amino-, and its salts (v. BRAUN, GOLL, and METZ), A., 1232.
 Ethylisoamylbarbituric acid, use of, as an anæsthetic (PAGE and CORYLLOS), A., 756.
 2-Ethylanilino-1:6:8-trinitronaphthalene (VAN DER KAM), A., 1240.
 9-Ethylanthracene, 10-bromo-, and its tetrabromide and 2:3:10-tribromo- (BARNETT and MATTHEWS), A., 1030.
 Ethylantranilic acid, β -hydroxy-, and its methyl ester and its salts and derivatives (KIPRIJANOV), A., 950.
 α -Ethyl-*l*-araboside (BRIDEL and BÉGIN), A., 501.
 Ethylarsinic acid, dihydroxy- (ÉTAB. POULENC FRÈRES, and OCHSLIN), (P.), B., 965.
 5-Ethylbarbituric acid, 5- β -hydroxy-, and 2-thio-5- β -hydroxy- (CRETCHER, KOCH, and PITTEGER), A., 180.
 2-Ethylbenzo-1:4-pyrone, 6-chloro- (WITTIG, BANGERT, and RICHTER), A., 301.
 2-Ethylbenzylamino-1:2:3:4-tetrahydronaphthalene, *p*- β -amino-, and its benzoyl derivative, and their salts (v. BRAUN, GOLL, and METZ), A., 1233.
 Ethylbenzyl- β -phenylethylamine, *p*-amino-, and its benzoyl derivatives, and their salts (v. BRAUN, GOLL, and METZ), A., 1233.
 Ethyl- β -bromoallylaniline, and its salts (v. BRAUN, KÜHN, and SIDDQUI), A., 851.
 Ethylbutylbarbituric acid, compounds of mercuric oxide and (FLEURY), A., 305.
 Ethyl-*sec*-butylbarbituric acid (ROGER), (P.), B., 899.

- Ethyl-*sec*-butyliminobarbituric acid (ROGER), (P.), B., 899.
 α -Ethylbutyric acid, thallous salt (WALTER), A., 712.
 α -Ethylbutyrylcarbamide, α -bromo-. See Adalinc.
 Ethylcarbamic acid, dimethylaminophenyl esters, and their derivatives (STEDMAN), A., 974.
 9-Ethylcarbazole, 3:6-diiodo- (TUCKER), A., 622.
 9-Ethylcarbazole-3-phosphinous acid (CASSELLA & Co.), (P.), B., 996.
 4-Ethylcarbonatobenzoic acid, and 3-nitro- (KING and MURCH), A., 186.
p-Ethylcarbonato-*m*-methoxybenzoic acid, and its anhydride (HEAP and ROBINSON), A., 1149.
 1-Ethylcarbonatonaphthalene-2-sulphonyl chloride (LESSER and GAD), A., 168.
 Ethylcarbothiolonlactic acids and their salts (HOLMBERG), A., 939.
 Ethylcarbylamine, action of, on catalysis by (TODA), A., 943.
 effect of, on the Pasteur reaction (WARBURG), A., 974.
 CC-Ethylchlorocrotonylbarbituric acid (URSUM, SCHÜTZ, TAUB, and WINTHROP CHEMICAL Co.), (P.), B., 609.
 Ethylchlorocrotonylmalonic acid, diethyl ester (URSUM, SCHÜTZ, TAUB, and WINTHROP CHEMICAL Co.), (P.), B., 609.
 Ethylcresols, and their phenylurethanes (v. AUWERS, BUNDESMANN, and WIENERS), A., 609.
 γ -Ethyldecane- γ -diol (NICOLLE), A., 383.
 Ethyl- $\beta\beta$ -dicarbethoxydiethylamine (McELVAIN), A., 1044.
 2-Ethyl-1:2-dihydrobenzthiazole, 1-imino-, and its bromides (HUNTER), A., 849.
 Ethyldihydromorphine, action of ozone on (SPEYER and POPP), A., 532.
 ϵ -Ethyldodecane- ϵ -diol (NICOLLE), A., 383.
 Ethylene, reactions of, under the influence of α -particles (LIND, BARDWELL, and PERRY), A., 770.
 adsorption of, by catalysts (LAZIER and ADKINS), A., 467.
 hydrogenation of, in presence of calcium (PEASE and STEWART), A., 43.
 polymerisation and hydrogenation of, by means of excited mercury atoms (OLSON and MEYERS), A., 364.
 from petroleum, production of alcohol from (GERR and POPOV), B., 803.
 reaction of chlorine with (NORRISII and JONES), A., 226;
 (STEWART and FOWLER), A., 690.
 influence of, on explosion limits of oxyhydrogen gas (JORISSEN and ONGKIEHONG), B., 179.
 reduction of potassium permanganate with (STEOPOE), A., 676.
 reaction of, with sulphuric acid (COMPTON and CARBIDE & CARBON CHEMICALS CORP.), (P.), B., 931.
 narcosis by (NICLOUX and YOVANOVITCH), A., 1058.
 derivatives, addition of methyl hypobromite and hypochlorite to (JACKSON), A., 1023.
 dibromide, interaction of dithioethylene glycol and (BENNETT), A., 1123.
 bromohydrin, preparation of (McDOWALL), A., 381.
 bromo- and chloro-hydrins, naphthylurethanes from (BICKEL and FRENCH), A., 517.
 dichloride, manufacture of (I. G. FARBENTIND.), (P.), B., 900.
 α -monochlorohydrin, preparation of (RIBAS and FOURNEAU), A., 711.
 Ethylene halogen derivatives, molecular polarisation of isomeric (ERRERA), A., 225.
 dihalogen derivatives, ultra-violet absorption spectra of (ERRERA), A., 884.
 bromo-derivatives, action of sodium on (KIRRMANN), A., 44.
 s -dichloro-, stereoisomeric (VERHOOGEN), A., 495.
 chloroiodo-, stereoisomerides of (VAN DE WALLE and HENNE), A., 496.
 action of bromine on (VAN DE WALLE and HENNE), A., 496.
 Ethylene glycol, preparation of (CHEM. FABR. KALK and OEHME), (P.), B., 108.
 as anti-freeze material (CURME and YOUNG), B., 1.
 alkyl ethers, solubility of, in water (COX and CRETCHER), A., 344.
 naphthylurethane from (BICKEL and FRENCH), A., 517.
 Ethylene glycol, dithio-, interaction of ethylene dibromide and (BENNETT), A., 1123.
 α -Ethylene γ -glycols, isomeric, and their acetates (PRÉVOST), A., 818.
 Ethylene linking, electronic structure of (GILMAN and PETERSON), A., 495.
 Ethylene oxide, catalytic hydrogenation of (SABATIER and DURAND), A., 497.
 pyrogenic decomposition of (PEYTRAL), A., 497.
 Ethylene oxides, isomerism of (TIFFENEAU and LÉVY), A., 383, 818.
 Ethylenedi-aminobisacetylacetone, compounds of, with copper, nickel, and palladium salts (MORGAN and SMITH), A., 600.
 Ethylenebisacetylacetone, keto-enolic isomerism of, and its oximes (MORGAN and TAYLOR), A., 273.
 Ethylenediamine, molecular volume of (MOLES), A., 778.
 Ethylenediammonium copper salts (MORGAN and BURSTALL), A., 1027.
 Ethylenediguanidine, and its salts (SCHENCK and KIRCHHOFF), A., 825.
 Ethylenedimethylsulphonium iodides, and their salts (WEDEKIND), A., 146.
 Ethylenic acids, stereoisomerism of (GONZÁLEZ), A., 712.
 Ethylenic compounds, dielectric compounds and stereoisomerism of (ERRERA and LEPIGNE), A., 777.
 isomeric, optical properties of (ERRERA), A., 884.
 cis -Ethylenic compounds, synthesis of (BOURQUEL and YVON), A., 269.
 Ethylethoxymethylurethane (BLAISE and MILIOTIS), A., 943.
 Ethyl- γ -cyclogeraniolene (ESCOURROU), A., 1238.
 Ethylglycine, chloro-, hydrochloride (ABDERHALDEN, PAFFRATH, and SICKEL), A., 97.
 4-Ethylglyoxaline, 4- β -amino-. See Histamine.
 Ethylguanidine, and its salts (SCHENCK and KIRCHHOFF), A., 717.
 γ -Ethylheptano- γ -diol (NICOLLE), A., 383.
 8-Ethyl- Δ^8 -hexen-8-ol (BRUYLANTS and MATHIJS), A., 1027.
 2-Ethyl-1-hydrindone, and its derivatives, and 2-bromo- (LEUCHS and KOWALSKI), A., 293.
 O-Ethyldihydroxydiethylhydroxylamine, and its derivatives (JONES and BURNS), A., 155.
 5-Ethyl-5- β -hydroxyethylbarbituric acid, and 2-thio- (CRETCHER, KOCH, and PITTINGER), A., 180.
 Ethyl β -hydroxyvinyl ketone, and its derivatives (BENARY, MEYER, and CHARISIUS), A., 273.
 Ethylenediaminoacetic acid, sodium salt (SCHEIBLER and NEEF), A., 943.
 α -Ethylenecamphidone, and its derivatives (SALMON-LEGAGNEUR), A., 951.
 Ethylenedi-2-pyridyldiamine (SCHMID and BECKER), A., 845.
 5-Ethylimino-4- β -ethylamino- β -ketoethyliminobenzyl-2-phenyl-oxazoline (GRÄNACHER), A., 79.
 2-Ethylindazole (v. AUWERS and ALLARDT), A., 307.
 Ethylmercaptomercuric oxide, bromoform compound of (SACHS and BALASSA), A., 596.
 2-Ethyl-4-methyleneoxazolin-5-one (BERGMANN and STERN), A., 743.
 N-Ethyl-naphthalamic acid, β -amino- (BISTRZYCKI and RISI), A., 67.
 Ethyl- β -naphthylamine, ω -amino-, acetyl derivative (FARBENFABR. FORM. BAYER & Co.), (P.), B., 657.
 N-Ethylnicotine (KARRER and TAKAHASHI), A., 627.
dl- α -Ethylolcotic acid, and its esters (DOX), A., 146.
 Ethylphenols, phenylurethanes of (STEINKOFF and HÖPNER), B., 624.
 Ethylphenoxyacetic acids (STEINKOFF and HÖPNER), B., 624.
 p -Ethylphenyl β -anilino- β -phenylethyl ketone (WEYGAND and MATTHIES), A., 1248.
 α -Ethyl- β -phenylethyl alcohol, β' -amino-, and its di-*p*-nitrobenzoyl derivative (v. BRAUN and REICH), A., 178.
 Ethylphosphoric acid, salts, hydrolysis of, by phosphatase (IWAT-SURU), A., 867.
 Ethylpropargylaniline, and its salts (v. BRAUN, KÜHN, and SIDDIQUI), A., 851.
 Ethylpyridinium tetrabromo- and tetraiodo-thallates (KRAUSE and v. GROSSE), A., 1112.
 1-Ethylpyridonenitroimide (TSCHITSCHIBABIN and MENSCHIKOV), A., 845.
 N-Ethylquinolone-3-benzyl thioether (GRÄNACHER, OFNER, and KLOPFENSTEIN), A., 81.
 N-Ethylquinrhodine, and its derivatives (GRÄNACHER, OFNER, and KLOPFENSTEIN), A., 81.
 Ethylseleninic acid hydrochloride and nitrate (SHAW and REID), A., 497.
 5-Ethylselenol-1-*n*-butylsulphoncanthraquinone (SHAW and REID), A., 498.
 α -Ethylstyrene (JOHNSON and KON), A., 1246.
 α -Ethylsulphonylbenzenesulphonamide (HURTLEY and SMILES), A., 948.

- Ethyltetra-acetylmannosides (LEVENE and SOBOTKA), A., 601.
 Ethyl-4^o-tetrahydrophthalide (BERLINGOZZI and MAZZA), A., 835.
 Ethylthiazane-1-dioxide, and its hydrochloride (LAWSON and REID), A., 80.
 2-Ethylthiol-5-anilinomethylene-4-thiazolidone (DAINS and DAVIS), A., 531.
 Ethyldithiophosphoryl chloride (PISCITSCHIMUKA), A., 145.
 5-Ethyl-5- β -vinylxyethylbarbituric acid, and 2-thio- (CRETCHER, KOON, and PITTENGER), A., 180.
 Ethyl- β -vinylxyethylmalonic acid, diethyl ester (CRETCHER, KOON, and PITTENGER), A., 180.
 Ethylxanthyl perchlorate (CONANT, SMALL, and SLOAN), A., 842.
 5-Ethyl-4-*m*-xyleneol, and its phenylurethane (v. ADWERS, BUNDESMANN, and WIENERS), A., 609.
 Etna, lavas of (WASHINGTON, AUROUSSEAU, and KEYES), A., 1223.
 Ettingshausen effect (HALL), A., 114.
Eucalyptus calophylla, tannin from the kino of, and its derivatives (McGOOKIN and HEILBRON), A., 409.
Eucalyptus oil, Rhodesian (CARTER and READ), B., 76.
 Eucazulene (RUZICKA and RUDOLPH), A., 299.
Eucharis multicornis, photolysis of luminescent granules of (MOORE), A., 760.
 Eudesmol, identity of, with uncineol (PENFOLD), A., 1042.
 Eudialite from the Chibine Mountains, and its transformation product (TSCHERNIK), A., 595.
 Eugenols, α -naphthylurethanes from (FRENCH and WITTEL), A., 830.
Euphorbia helioscopia, seeds of (GILLOT), B., 758.
 Europium, arc spectrum of (PINA DE RUBIES), A., 986.
 ultra-violet spectrum of (GARDINER), A., 774.
 Eutectics, use of, as glazes (KRANER), B., 632.
 Eutectic point, lowering of, in binary mixtures (KORDES), A., 798.
 Evacuated vessels, variation of pressure with temperature in (CAMPBELL), A., 894.
 Evaporation process and apparatus (Soc. GÉN. D'ÉVAPORATION PRACHE & BOUILLON), (P.), B., 519.
 utilisation of heat in (GILCHRIST), (P.), B., 855.
 and capillarity (SCHULTZE), A., 1094.
 use of rotating tubes in (BARKHOLT), B., 143.
 of liquids, spray (MCLEOD), (P.), B., 392.
 of solutions (CARRIER ENGINEERING Co. and ROBERTSON), (P.), B., 304; (COLLARD), (P.), B., 438.
 in vacuo (N.V. NEDERLANDSCHE INSTALLATIE MAATS. THERMA and PETERSEN), (P.), B., 113.
 of unstable solutions, apparatus for (GÄDE and STRAUB), A., 211.
 nitrocellulose membranes for (LOONEY and KOBER), (P.), B., 392.
 multiple-effect (MOORE and BROWN Co.), (P.), B., 520.
 Evaporation apparatus (BLAIR, CAMPBELL, & McLEAN, LTD. and PHILLIPS), (P.), B., 647; (KRAUSE), (P.), B., 935.
 regulation of (Soc. DES CONDENSEURS DELAS), (P.), B., 647.
 Evaporation plant (MUGLER), (P.), B., 968.
 Evaporators (FOTHERGILL), (P.), B., 2, 471, 1000*; (MILES and BUFFALO FOUNDRY & MACHINE Co.), (P.), B., 81; (KEMER), (P.), B., 144, 696; (RIGBY), (P.), B., 305*; (GOLDING and STEAD), (P.), B., 471; (THUNHOLM), (P.), B., 473*; (PAUL), (P.), B., 520; (GRISCOM-RUSSELL Co. and BROWN), (P.), B., 855.
 prevention of adhesion of scale in (SCHNETZER), (P.), B., 113.
 with feed-heating systems (BARCOCK & WILCOX and SPYER), (P.), B., 145*.
 for brine, density regulator for (PRICE and GRISCOM-RUSSELL Co.), (P.), B., 875.
 for refrigeration apparatus (OTTO and JANKUS), (P.), B., 968.
 centrifugal (KEMER), (P.), B., 935.
 vacuum (MILES and BUFFALO FOUNDRY & MACHINE Co.), (P.), B., 113; (SWENSON EVAPORATOR Co.), (P.), B., 304.
 vapour compression (Soc. DES CONDENSEURS DELAS), (P.), B., 968.
 vertical film type (GRISCOM-RUSSELL Co. and SEBALD), (P.), B., 647.
 Ewes, utilisation of mineral salts by, during gestation (WINTER), A., 429.
 Excreta, energy values of (BENEDICT and FOX), A., 426.
 water-soluble, rate of excretion of, of aquatic animals (LENK), A., 444.
 Expansion coefficients at low temperatures (BUFFINGTON and LATIMER), A., 1088.
 relation of, to compressibility (VRKLJAN), A., 786.
 and free space (HERZ), A., 1088.
 of liquids (HERZ), A., 463.
 Explosions (JORISSEN and ONGKIEHONG), A., 359, 690; (JORISSEN), A., 906.
 calculation of temperatures of (MURAOUR), A., 480.
 effect of pressure on formation of waves in (DUMANOIS and LAFFITTE), A., 913.
 preventing or quenching of, in mines, etc. (WASHINGTON CHEMICAL Co. and NEWALL), (P.), B., 566.
 in petrol engines (TIZARD), B., 618.
 coal dust (GREENWALD and WHEELER), B., 178.
 stone dust as preventive of (RICE and WHEELER), B., 178.
 firedamp, within closed vessels (MAXWELL and WHEELER), B., 179; (FENNING), B., 258.
 in gases (GARNER; PAYMAN and WHEELER; MAXON, HARWOOD, and HIGGINS), A., 689; (LIND), A., 690; (GARNER and SAUNDERS), A., 1205.
 radiation in (DAVID), A., 693.
 ionisation in (GARNER and SAUNDERS), A., 654.
 propagation of flame in (STEVENS), A., 913.
 of inflammable gases, limits of (JORISSEN), A., 1100.
 of mixed gases (JORISSEN and ONGKIEHONG), B., 179.
 at high densities (DAVID), A., 341.
 Explosion wave (LAFFITTE), B., 110.
 Explosives (LEWIS and DU PONT DE NEMOURS & Co.; MORAN and DU PONT DE NEMOURS & Co.), (P.), B., 78; (UNGER), (P.), B., 142*; (WOHL), (P.), B., 221; (DAVIS), (P.), B., 388; (SCOTT and MEXCO), (P.), B., 422; (SNELLING and TROJAN POWDER Co.), (P.), B., 723.
 fifty years of (SCHLATTER), B., 854.
 production of (NORDDEUTS. TORF-KOKEREI), (P.), B., 613.
 pressure wave sent out by (PAYMAN and ROBINSON), B., 421.
 stability of (TONEGUTTI), B., 174.
 determination of stability of, at 135° (VIGNAU and ANGLI), B., 723.
 stabiliser for (PATRICK and SILICA GEL CORP.), (P.), B., 934.
 primers for (SPRENGSTOFFWERKE NAUSER & Co. and PYL), (P.), B., 613.
 determination of the velocity of detonation over short lengths of (JONES), B., 693.
 metalammines and hydrazinates of heavy metal chlorates and perchlorates as (FRIEDERICH and VERVOORST), B., 933.
 mixtures of sodium and ammonium nitrates for (DEHN), (P.), B., 221.
 of the Sprengel type (SCOTT and SULMAN), (P.), B., 254.
 azide, modification of the brisance of (BIRCKENBACH and RÖRIG), B., 254.
 blasting (PRATT and ATLAS POWDER Co.), (P.), B., 142.
 gelatinous, machines for rolling of (GREENWOOD & BATLEY and BARKER), (P.), B., 613*.
 initiating (CLAESSEN), (P.), B., 254.
 liquid air (LES PETITS-FILS DE WENDEL & Co.), (P.), B., 966.
 nitroglucoside (MORAN and DU PONT DE NEMOURS & Co.), (P.), B., 613.
 propellant (FRANKLIN), (P.), B., 142.
 chemical stability of, as an additive property (TONEGUTTI), B., 646.
 smokeless (SCOTT), (P.), B., 723.
 determination of tetryl in (LEHMSTEDT), B., 388.
 See also Cartridges, Detonators, and Powders.
 Extraction of soluble and insoluble substances (BENDIXEN and F.R.M. Co.), (P.), B., 696*.
 Extraction apparatus (BENDIXEN, McKECHNIE, and REID), (P.), B., 2; (KIRCHSEISEN), (P.), B., 13; (SINGER), (P.), B., 209; (BRÜGMANN), A., 593; (HOLZHEUER), (P.), B., 718; (SONLE and COMBUSTION UTILITIES CORP.), (P.), B., 808.
 combined filtration and (DANIELS and NAT. ANILINE & CHEMICAL Co.), (P.), B., 114.
 for oils, fats, waxes, resins, and greases (MACGREGOR and SCOTT & Co.), (P.), B., 923.
 for volatile oils (CRINE), (P.), B., 699.
 vacuum, for biochemistry (GUERRANT), A., 1223.

Extractives, animal, physiology of alkaloids and (KUTSCHER and ACKERMANN), A., 316.
 determination of nitrogen in (WEBER), A., 444.
Extractors, centrifugal, bearings for (SUMBLING), (P.), B., 937.
Exudates, formation of amino-acids and sulphur in (LOEPER, DECOURT, and TONNET; LOEPER, DECOURT, and LESURES), A., 1169.
Eye, cholesterol in (DEHORNE), A., 316.
 lactic acid content of aqueous humour of (WITGENSTEIN and GAEDERTZ), A., 1167.
 sulphate content of aqueous humour of (HEUBNER and MEYER-BISCH), A., 1167.
 substance which reduces intra-ocular pressure in (WOLFF and DE JONGH), A., 91.
 constituents of the vitreous body of (IKEDA), A., 857.
 ultramicroscopy of the vitreous humour of (HEESCH), A., 1098.
Eye-piece, micro-pyrometer (GOETZ), A., 932.

F.

Fabrics, machines for drying, lustring, and finishing (CALICO PRINTERS' ASSOC., and FARNWORTH), (P.), B., 11.
 apparatus for drying of (LYTH), (P.), B., 534*.
 coating of (J. D. and D. MACLAURIN), (P.), B., 627.
 electrodeposition of rubber on (SHEPPARD, BEAL, and EASTMAN KODAK CO.), (P.), B., 793.
 protection of, against moths (SCHMITZ), (P.), B., 314.
 containing artificial filaments, treatment of (BRITISH CELANESE, LTD., BRIGGS, KIDD, and PALMER), (P.), B., 1008.
 cellulosic, treatment of, with sulphuric acid (KNOW MILL PRINTING CO., MORT, and WEEKS), (P.), B., 11.
 deteriorated, humus compounds in (THAYSEN, BAKES, and BUNKER), B., 305.
 ulmic compounds in (THAYSEN, BAKES, and BUNKER), B., 476*.
 patterned, manufacture of (DREYFUS), (P.), B., 785.
 rubber-coated (DUNLOP RUBBER CO. and DEXTER), (P.), B., 534*.
 soiled, washing of (DUHAMEL and COMP. GÉN. IND. TEXTILES), (P.), B., 122, 912.
 waterproof, production of (KNOPF), (P.), B., 627.
 waterproof and gasproof, manufacture of (BRITISH CELANESE, WOODMAN, and DICKIE), (P.), B., 532.
 See also Textiles.
Fæces, determination of hydrogen-ion concentration of (ROBINSON), A., 424; (GREFFI), A., 1269.
 human, hydrogen-ion concentration of (SCHAUDT), A., 317.
 detection of blood and coproin in (SCHUMM and DANKMEIER), A., 317.
 determination of calcium in (CORLEY and DENIS), A., 444.
 determination of fat in (FOWWEATHER), A., 971.
 determination of lead in (ANON.), A., 592.
Fagus sylvatica (red beech), chemistry of bark of (ZELLNER), A., 1281.
Fast Red TR base, constitution of (ROWE and LEVIN), B., 310.
Fast Scarlet TR base, constitution of (ROWE and LEVIN), B., 311.
Fat, extraction of, from bones (HJORT), (P.), B., 372; (SHEARMAN), (P.), B., 377.
 distribution of, in animal tissues (VLADESCO), A., 444.
 from spent hydrogenation catalysts (STIEPEL), B., 247.
 recovery of (DABOUST), B., 923.
 of butter. See under Butter.
 in milk. See under Milk.
 effect of insulin on, in animals on vitamin-free diets (ONOHARA), A., 206.
 fibres on needles for spearing insects (SCHMIDT), A., 1099.
 globules, agglutination of (BROUWER; HEKMA), B., 337.
 human (WAONER), A., 1051.
 subcutaneous, in infants (CHANNON and HARRISON), A., 425.
 determination of, in cocoa and chocolate (RUFFY), B., 765.
 determination of, in milk (PLATON), B., 563.
 determination of, in dried milk (DELLEPIANE), B., 563.
 determination of, in tissues and organs (ZELINSKI and ZINZADZE), A., 1283.
Fats, preparation of, from fatty acids with an odd number of carbon atoms (FARB. V. BAYER & CO.), (P.), B., 287.
 manufacture of (KAHN and SOC. FRANÇ. PROD. ALIMENTAIRES AZOTÉS), (P.), B., 297*.

Fats, recovery of, from vegetable rinds (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 333.
 separation of from animal tissues (CHEM. ENGINEERING CO., SPENSLEY, and BATTERSBY), (P.), B., 20.
 de-acidification of (BOLLMANN), (P.), B., 987.
 purification of (METALLBANK & METALLURGISCHES GES. and GENSECKE), (P.), B., 66; (FORAY), (P.), B., 594; (KONSTAS and SOC. ANON. IND. DES MATIÈRES GRASSES ET SAVONS "VELOS"), (P.), B., 713; (RAVINETTI), (P.), B., 795.
 purification and deacidification of (KUNEROLWERKE KHUNER & SOHN), (P.), B., 500.
 purification and deodorisation of (N. V. JURGENS' VEREEN. FABR.), (P.), B., 449.
 deodorising and clarifying of (FORAY), (P.), B., 987.
 refining of (GEPHART and COCOA PRODUCTS CO. OF AMERICA), (P.), B., 714.
 colloidal reactions in (LEIMDÖRFER), B., 758.
 removal of free fatty acids and other impurities from (LEVER BROS., CRAIG, and SHAWFIELD), (P.), B., 20.
 chemical nature of (MARGOSCHES and FUCHS), B., 371.
 photoactivation of, by Röntgen rays (HAMANO), A., 546.
 photoactivation of, in ultra-violet light (HAMANO), A., 98.
 spreading of lenses of, on water (ADAM and JESSOP), A., 348.
 splitting of, in autoclaves (RIEMER), B., 286.
 apparatus for distillation of (CONTINENTAL A.-G. F. CHEMIE & REICHSVERKEHRSBANKE), (P.), B., 594.
 distillation of volatile substances from (N. V. JURGENS' MARGARINEFABR.), (P.), B., 448.
 extraction apparatus for (MACGREGOR and SCOTT & CO.), B., 923.
 extraction of mixtures of oils and, with alcohol (KUBIERSCHKY), (P.), B., 287.
 solvent for extraction of (RIEDEL), (P.), B., 597.
 solvents for (BILLS), A., 571.
 acetylation of (BOURGOIN), (P.), B., 288.
 decomposition of (SCHRAUTH), (P.), B., 449*.
 chemical reactions in hardening of (NORMANN), B., 552.
 hydrogenation of (N. V. ALGEM. NORIT MAATSCHAPPIJ), (P.), B., 333.
 hydrolysis of (SCHRAUTH), (P.), B., 287.
 oxidation of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 987.
 atmospheric oxidation of (SMITH and WOOD), B., 713.
 influence of glutathione on oxidation of (ALLOTT), A., 1172.
 vulcanisation of (VAN DER MEULEN), (P.), B., 137*.
 formation of carbohydrates from (ASHER and CALVO-CRIADO), A., 198.
 action of hydrazine and phenylhydrazine on (VAN ALPHEN), A., 46.
 formation of petroleum hydrocarbons from (MAROUSSON and BAUERSCHÄFER), B., 117, 970.
 origin and detection of rancidity in (PRITZKER and JUNGHUNZ), B., 1020.
 tests for rancidity in (BULIR), B., 66.
 animal, extraction of (LAANS, and ALLBRIGHT-NELL CO.), (P.), B., 449.
 purification of (VIDAL), (P.), B., 21.
 filters for (J. V. and C. C. APABLASA), (P.), B., 176.
 brominated, refraction of (SCHWICKER and SCHAY), B., 593.
 crude, acid value and "impure acid value" of (HIDAKA), B., 199.
 edible, manufacture of (SCHOU), (P.), B., 297*.
 hardened, detection of traces of nickel in (WAENNAAR), B., 678.
 liquid, distillation of (MELHARDT), (P.), B., 449.
 mixed, xylene number of (v. RAALTE), B., 563.
 determination of milk fat and coconut oil in (FINCKE), B., 836.
 saponifiable, bleaching action of hydrogen peroxide on (STIEPEL), B., 758.
 synthetic, relative nutritional value of (OZAKI), A., 1272; B., 930.
 waste, separation of constituents of (CONTINENTALE A.-G. FUR CHEMIE and TERN), (P.), B., 1020.
 analysis of, use of thiocyanogen in (KAUFMANN), B., 447.
 relation between constants of (SCHAY), B., 593; (WOLFF), B., 836.
 bromometric examination of (KAUFMANN), B., 447.
 determination of bromine value of (RUFF and BRACHMANN), B., 499.
 determination of iodine value of (MARGOSCHES and NEUFELD), B., 414; (AUSTEN), B., 447.
 differential iodine value of (MARGOSCHES and FUCHS), B., 371.

- Fats**, new method of determination of composition of (KAUFMANN), B., 165.
 detection of unsaponifiable oils in (HOLDE and GORGAS), B., 593, 836.
 detection and determination of chromium in (SNODDY), B., 285.
 determination of fatty acids in, for customs purposes (HELLER), B., 372.
 determination of water in (KREIS), B., 338.
 separation of glycerides from (ALLGEM. GES. F. CHEM. IND.), (P.), B., 332.
- Feathers**, deodorisation of (GALLAGHER and TANNERS PRODUCTS Co.), (P.), B., 356.
- Feeding-stuffs**, manufacture of (BERRIGAN), (P.), B., 171* ; (VASSEUX), (P.), B., 383.
 deodorisation of vapours in (STERLING), (P.), B., 141.
 preservation of (SABALITSOHKA), (P.), B., 383.
 influence of gases on conservation of (SCHMIDT), B., 382.
 net energy values of (FORBES and KRIS), B., 382.
 cattle, production of (WOOLNER), (P.), B., 689.
 sap-containing, preservation of, by the electric current (SCHWEIZER), (P.), B., 719.
 electrical apparatus for preservation of (SIEMENS-SCHUCKERTWERKE, KAUFMANN, and CRAMER), (P.), B., 297.
 self-preserving (GRELCK), (P.), B., 419*.
 semi-solid (GRELCK), (P.), B., 74.
 young green, preservation of (SCHMIDT), B., 847.
 prevention of bumping in determination of crude fibre in (LEPPER), B., 418.
- Fehling's solution**, determination of invert sugar with (OFNER), B., 928.
- Felt**, manufacture of (C. & E. PICHARD), (P.), B., 532.
- Fenugreek seeds**, composition of, and their admixture with wheat for flour-milling (FLEURENT), B., 418.
- Fergusonite**, Japanese (SATO), A., 934.
 analysis of (KIMURA), A., 144.
- Fermentation**, assimilation, and respiration (WINDISCH), B., 603.
 chemical processes in (NORD), A., 867.
 intermediate reactions in (v. EULER and SWARTZ), A., 867.
 method of arresting (BOULARD), A., 867.
 substance inhibiting (MYRBÄCK), A., 95.
 production of acetone and ethyl alcohols in (BAKONYI), A., 545.
 formation of pyruvic acid in (TRAETTA-MOSCA), A., 978 ; (CAGAN), A., 1061.
- alcoholic, relation of hydrogen-ion concentration to (HÄGGLUND and AUGUSTSON), A., 324, 543 ; (HÄGGLUND, SÖDERBLOM, and TROBERO), A., 543 ; (HÄGGLUND and ROSENQVIST), A., 1177.
 fixation of acetaldehyde in (BODNÁR, SZEPFESSY, and FERENCZY), A., 438.
 action of fat solvents on (KERR and YOUNG), A., 1277.
 effect of hydrocyanic acid on (WARBURG ; NEUBERG and PERLMANN), A., 434.
 effect of hydrogen sulphide on (NEGELEIN ; NEUBERG and PERLMANN), A., 434.
 action of manganese on (ROSENBLATT and MARCH), A., 641.
 influence of oxygen on (MEYERHOF), A., 95 ; (GORR and PERLMANN), A., 1061.
- bacterial, end-products of (KAY), A., 643.
 by yeast, action of ammonium salts on (ZELLER), A., 1061.
 by dried yeast (ABDERHALDEN), A., 543.
 See also Yeast.
- Ferrase** (WOLFF), A., 322.
- Ferric salts**. See under Iron.
- Ferricyanides**, determination of, with titanous sulphate (SOMEYA), A., 705.
- Ferrite**, X-ray study of formation of (FOLEY), B., 59.
 deformation lines in crystals of (O'NEILL), A., 564.
- Ferrites**. See under Iron.
- Ferro-carbon-titanium**, use of, for deoxidising steel (COMSTOCK), B., 826.
- Ferrocromium**, manufacture of (WILD and RUSTLESS IRON CORP. OF AMERICA), (P.), B., 635* ; (BERLIN and AKTIEB. FERROLEGERINGAR), (P.), B., 756*.
- decarbonisation of (SIEMENS and HALSKE, FREDERICH, and RODENHAUSER), (P.), B., 412.
- Ferrocyanides**, complex (GASPAR Y ARNAL and CASTRO-GIRONA y POZURAMA), A., 920.
- Ferro-ferricyanide solutions**, polarisation capacity of platinum electrodes in (BECKER), A., 801.
- Ferro-magnetic powders**, measurement of magnetisation of (CHEVALLIER), A., 783.
- Ferromagnetic substances**, specific heat of (SUCKSMITH and POTTER), A., 893.
- Ferromanganese**, anodic behaviour of (CAMPBELL), A., 1106.
- Ferronickel**, physico-chemical equilibrium of (PESCHARD), B., 58.
 new, magnetic properties of (TSCHERNING), B., 58.
- Ferronitric-oxide**, salts of, constitution and absorption spectra of (MANCHOT and LINCKH), A., 452.
- Ferronitroso-sulphide**, compounds of, constitution and absorption spectra of (MANCHOT and LINCKH), A., 453.
- Ferrous salts**. See under Iron.
- Ferrovanadium**, manufacture of (VOGT and STANDARD CHEMICAL Co.), (P.), B., 96.
 determination of vanadium in (SOMEYA), B., 278.
- Ferrozirconium**, manufacture of (McKEE and DONALDSON), (P.), B., 196.
- Ferrum carb. sacchar.**, evaluation of (v. BRUCHHAUSEN), A., 591.
- Ferrum reductum**, determination of iron in (HÖRLÜCH), B., 897.
- Fertilisers** (RHEINLANDE VEREIN CHEM. FABR. A.-G. and BRENEK ; REITMAIR), (P.), B., 71 ; (WITTS), (P.), B., 764 ; (THARALDSEN and LIE), (P.), B., 800 ; (I. G. FARBENIND.), (P.), B., 893 ; (BARSKY and AMER. CYANAMID Co. ; BRAHAM and ALLISON), (P.), B., 991.
 manufacture of (BERRIGAN), (P.), B., 171* ; (HILLER), (P.), B., 507* ; (PEASE), (P.), B., 559*, 685, 717 ; (FIELDING), (P.), B., 684 ; (WOOLNER), (P.), B., 689 ; (PEASE and TYRER), (P.), B., 717.
 from acid-soluble minerals containing potassium (NORSK HYDRO-ELEKTRISK. KVAELSTOFAKTIESELSKAB), (P.), B., 800.
 from sewage and other substances (STÖTZEL), (P.), B., 302.
 from vinasses (SOC. DES ÉTABL. BARBET), (P.), B., 893.
 treatment of (AXELSEN and NORSK HYDRO-ELEKTRISK KVAELSTOFAKTIESELSKAB), (P.), B., 139*.
 as sources of ammonia (SKINNER and BUIE), B., 960.
 containing ammonium chloride and sulphate (DANNEEL), (P.), B., 139.
 conversion of calcium nitrate into (I. G. FARBENIND.), (P.), B., 893.
 containing calcium nitrate and urea (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 293.
 relative merits of calcium phosphates as (KLING ; INGHAM ; HALL ; WEBBER ; DODDS ; LAWSON), B., 892.
 industrial wastes as (REGE), B., 335.
 effect of, on mineral content of soils (GODDEN), B., 251.
 effects of methods of applying, on crops and on soil conditions (COE), B., 379.
 "asahi-promoloid" (BLANCK and SCHEFFER), B., 601.
 calcium nitrate (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 458*.
 carbon dioxide (RIEDE), B., 960.
 lime and phosphate, influence of, on phosphorus content of soil solution (PARKER and TIDMORE), B., 763.
 lime and potash, effects of, on muck soils (LOEWING), B., 717.
 mixed, manufacture of (I. G. FARBENIND.), (P.), B., 843.
 corrective for (FREISE and AMERICAN CYANAMID Co.), (P.), B., 1025.
 containing ammonium nitrate, storage of (HEPPES), (P.), B., 417, 843.
 determination of potash in (THORPE), B., 601.
 stable, containing calcium nitrate (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 336.
 nitrogenous, manufacture of, from calcium cyanamide (CHEM. FABR. HEPPES & Co. and CARPZOW), (P.), B., 379.
 from organic matter (COOKE and AMER. BECCARI CORP.), (P.), B., 991.
 nitrogen-potash, molasses spent wash as (CERASOLI), B., 562.
 phosphate (BLUMENBERG and STOCKHOLDERS SYND.), (P.), B., 764.
 manufacture of (CHEM. FABR. HEPPES & Co. and CARPZOW), (P.), B., 336 ; (OLSEN and TORKILDSEN), (P.), B., 991.
 availability of, for acid and non-acid soils (INGHAM), B., 840.
 urea (COMP. DE L'AZOTE ET DES FERTILISANTS), (P.), B., 417.
 manufacture of (A.-G. F. STICKSTOFFDÜNGER), (P.), B., 336 ; (LIDHOLM), (P.), B., 559*.
 comparative activities of (BRIOUX and PIEN), B., 250.
 standard methods of analysis of (SEN), B., 505.
 detection of leather in (JÖRET and RADER), B., 505.
 determination of ammonia in (SELKE), B., 250 ; (CHASTEL-LAIN), B., 505.

- Fertilisers**, determination of ammonia nitrogen in, conductometrically (JUNDER and PFUNDT), B., 684.
- Fertiliser industry**, fifty years in (BRECKENRIDGE), B., 843.
- Fibres**, structure of (HERZOG), B., 355.
- manufacture of, from viscose (KÄMPF), (P.), B., 401.
- preservation of, for manufacture of pulp (LATHROP and MUNROE), (P.), B., 315.
- treatment of (OBERHEINISCHE HANDELSGES. and URBELOHDE), (P.), B., 782.
- apparatus for treating, with dyes or other liquids (SCHLUMPF), (P.), B., 11*.
- from barks of terap, tutor, and baru (BISHOP), B., 266.
- animal, treatment of, with acid, alkaline, oxidising, or reducing liquors (BERGMANN, IMMENDÖRFER, and LÖWE), (P.), B., 785.
- carroting of (BACH), (P.), B., 314.
- production of effect threads from (FARB. v. BAYER & Co.), (P.), B., 318.
- artificial, washing bobbins of (BORZYKOWSKI), (P.), B., 152.
- banana (BISHOP), B., 266.
- from cellulose, after-treatment of (VOSS), (P.), B., 48.
- treatment of, with sulphuric acid (KNOW MILL PRINTING Co., MORT, and WEEKS), (P.), B., 11.
- crude, prevention of bumping in determination of, in feeding-stuffs, etc. (LEPPER), B., 418.
- determination of, in animal products (MACH and LEPPER), B., 644.
- dyed, physical changes of dyes within (HALLER and RUPERTI), B., 316.
- natural or artificial, production of colours or lustre on (N. V. NEDERLANDSCHE KUNSTLJDEFABR.), (P.), B., 437.
- paper-making, absorption of moisture by (FAY), B., 578.
- textile, treatment of (DUBOIS), (P.), B., 122; (SOC. ANON. A.L.F.A. APPLICAZIONI LAVORAZIONI FIBRA ALFA E AFFINI), (P.), B., 1009.
- to protect from insects (MAXWELL-LEFROY and GRAESSER-MONSANTO CHEMICAL WORKS), (P.), B., 738.
- influence of atmospheric humidity on absorption of moisture by (OBERMILLER and GOERTZ), B., 481.
- tensile strengths of, under wet and dry conditions (OBERMILLER and GOERTZ), B., 530.
- compositions for scouring of (LLOYD, WOMERSLEY, WILKINSON, and SCOTT), (P.), B., 663.
- weighting of (BERG and IMHOFF), (P.), B., 485.
- action of colloidal solutions on (HERBIG and SEYFERTH), B., 312.
- bacterial decomposition of (THAYSEN and BUNKER), (P.), B., 234, 817; (THAYSEN, BAKES, and BUNKER), B., 305.
- dyed, treatment of (McDOWELL), (P.), B., 50.
- removal of dyes from (HOLLANDER and ROHM & HAAS), (P.), B., 914.
- vegetable, pulverisation of (PUTT), (P.), B., 188.
- bleaching of (THOMPSON), (P.), B., 189; (CHEM. FABR. MILCH and LINDNER), (P.), B., 872.
- loose or worked-up, bleaching of (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 663.
- catalysis by iron and copper compounds of bleaching of, with perborates (DALSTRÖM), B., 740.
- production of colour-tone and coloured effects on (I. G. FARBENIND.), (P.), B., 785, 786.
- immunisation of, and their use in dyed and printed material (TAGLIANI), B., 872.
- Fibre board**, treatment of bagasse for manufacture of (MUNROE), (P.), B., 401.
- Fibrin**, action of pepsin on (SMORODINCEV and ADOVA), A., 322.
- Fibrinogen**, coagulation of (RABINOVITCH), A., 1267.
- Fibroin**, production of colloidal solutions of (v. WEIMARN), A., 1202.
- Fibrolite**, transformation of (RAAZ), A., 379.
- Fibrous materials**, manufacture of (RADUNER & Co.), (P.), B., 1010*.
- washing of (DUHAMEL and COMP. GÉN. IND. TEXTILES), (P.), B., 122.
- apparatus for drying (HAAS), (P.), B., 235*.
- disintegration of, by nitric acid (KRAIS), B., 86.
- mineralising of (GARROW and NOVOCRETE & CEMENT PRODUCTS Co.), (P.), B., 193*; (NOVOCRETES, LTD. and CASE), (P.), B., 608.
- manufacture of moulded or pressed goods from (KAYE), (P.), B., 1010*.
- artificial, improvement of (LILIENFELD), (P.), B., 782.
- Filaments**, artificial, production of (LEVY), (P.), B., 627; (SOC. FABR. DE LA SOIE "RHODIASETA"), (P.), B., 627*.
- artificial, nozzles for production of (COURTAULDS, LTD. and CRIZGAL), (P.), B., 976.
- Films**, composition for production of (GARDNER), (P.), B., 202.
- surface tension of (MARCELIN), A., 120.
- surface pressure and area of (ADAM and JESSOP), A., 468.
- on metals, rate of increase of thickness of (JUNG), A., 336; (TAMMANN and SIEBEL), A., 573.
- on surfaces, structure of (JUNG), A., 1094.
- application of gas laws to (COFMAN), A., 674.
- kinetic theory of (SCHOFIELD and RIDGAL), A., 239.
- spreading of (VOLMER and ADHIKARI), A., 467.
- aqueous, structure of, on salt solutions (HARKINS and GILBERT), A., 468.
- photographic. See Photographic films.
- thin, structure of (ADAM and JESSOP), A., 348, 1002, 1093.
- Filters** (HOEHN), (P.), B., 112; (LOMAX), (P.), B., 112, 856; (COTTRELL), (P.), B., 144; (APOBLASA), (P.), B., 176; (COE and CYCLE Co.), (P.), B., 256*; (GOETSCHINS, VOGT, and STANDARD CHEMICAL Co.), (P.), B., 423; (PEZOLD; PREBLE and SPRAY ENGINEERING Co.), (P.), B., 424; (FULCHER), (P.), B., 473*; (HOY), (P.), B., 568; (FRICK; OLIVER and BORDEN), (P.), B., 728; (SEITZ-WERKE), (P.), B., 807.
- medium support for (WOODWORTH and HAMILTON, BEAUCHAMP & WOODWORTH), (P.), B., 776.
- for dust-laden gases (THOMSON and NISBET), (P.), B., 80.
- for potable liquids (SELIGMAN), (P.), B., 297.
- for viscous liquids (LUNGE and COURTAULDS), (P.), B., 400.
- for oils and fats (J. V. and C. C. APABLASA), (P.), B., 176.
- for separation of oil from water (PIRBRIGHT Co. and PADDIE), (P.), B., 80.
- air, woven fabrics for use as (HOOVER Co.), (P.), B., 904.
- air or gas (CLEWORTH & Co. LTD. and CLEWORTH), (P.), B., 650.
- bacterial (KRAMER), A., 1062.
- edge (GEN. ELECTRIC Co. and GOLDSMITH), (P.), B., 80.
- enclosed continuous (WAIT), B., 343.
- fine-pored (ZSIGMONDY), A., 815.
- fritted quartz (JENAER GLASWERK SCHOTT & GEN.), (P.), B., 423.
- light (GIBSON), A., 1117.
- for polarimetry (SCHOORL), A., 142, 264.
- metal, for removal of dust from air (BERLOWITZ), B., 31.
- oil-sprinkled air, operation of (ALLNER), B., 144.
- rotary drum (WRIGHT and YOUNG), (P.), B., 728.
- stream-line, application of, to brewing and bottling of beer (HIND and PICKARD), B., 380.
- vacuum rotary (BIGOT), (P.), B., 472.
- water, operation of (ARMSTRONG), B., 29.
- composition of mud balls from (MAHLIE), B., 142.
- fineness modulus of sand for (TYLER), B., 29.
- Filter-aids**, inorganic, regeneration of (THATCHER and CELITE Co.), (P.), B., 472.
- Filter diaphragms** in electrolytic cells, purification of (SIEMENS & HALSKE and WEYL), (P.), B., 498.
- Filter-papers**, destruction of, in arsenic determinations (POGGI and POLVERINI), A., 1018.
- Filter-plates**, porous, determination of size and number of pores of (RUOSS), B., 223.
- Filter-press** (BISBEE), (P.), B., 696, 808*.
- multiple-chamber (PRUTZMAN and GEN. PETROLEUM CORP.), (P.), B., 856.
- Filtration** (GENTER and GEN. ENGINEERING Co.), (P.), B., 2*; (HINCHLEY, URE, and CLARKE), B., 175; (PENNEL), (P.), B., 178*; (COE and CYCLE Co.), (P.), B., 345; (GENTER; ZOUL and CELITE Co.), (P.), B., 424.
- pore diameter of separating surface in (MÜLHAUS), B., 615.
- materials for (WOOSTER), (P.), B., 81*; (HOODLESS), (P.), B., 696; (STELLING), (P.), B., 858.
- spent, treatment of, for re-use (BOECK and CELITE Co.), (P.), B., 256.
- of small amounts of material (HARTUNG), A., 593.
- practical applications of Lewis equation to (WEBER and HERSEY), B., 423.
- tests, method of conducting (SPERRY), B., 343.
- edge (HELE-SHAW and PICKARD), (P.), B., 423.
- vacuum, use of paper pulp in (MATTEVET), A., 700.
- Filtration apparatus** (CRAWFORD and ABEMBA), (P.), B., 224; (EVANS), A., 707; (PHILIPPS; AZZOPARDI), (P.), B., 856; (ANON.), A., 932.

- Filtration apparatus, laboratory (GORDON), A., 1270.
 extraction and (DANIELS and NAT. ANILINE & CHEMICAL CO.), (P.), B., 114.
 precipitation and (MILLS and CROWE), (P.), B., 112.
 Fineness of mineral fillers, determination of, in the rubber industry (KIRCHHOFF), B., 289.
 Finishing materials, growth of mould fungi on (MORRIS), B., 186.
 Fir trees, Bucovinian, rosin oils from (CZERNY), B., 248.
 Fires, preventing or quenching of, in mines, etc. (WASHINGTON CHEMICAL CO. and NEWALL), (P.), B., 566.
 Fire-bars and their behaviour in the fire (STUMPER), B., 255.
 Firebricks, manufacture of (SIEURIN), (P.), B., 14*.
 made by different processes, uniformity of strength and texture of (WESTMAN and PFEIFFER), B., 917.
 fusion points of mixtures of coal ash with (HEWITT), B., 917.
 Fireclay, green scumming on (CURRY), B., 878.
 Firedamp. See Methane.
 Fire-extinguishers, methylene chloride in (BRODTON), (P.), B., 472.
 dry, sodium bicarbonate in (GENTSCH), B., 391.
 Fireproofing (CRAIG and SPENCE & SONS), (P.), B., 152; (DEUTS. GASLÜCHT-AUER. GES.), (P.), B., 667.
 of organic fibrous material (STELLING), (P.), B., 858.
 of textiles (CRAIG and SPENCE & SONS), (P.), B., 739*.
 Fisetin, synthesis and derivatives of (ALLAN and ROBINSON), A., 1149.
 Fish, manufacture of food products from (SOC. FRANCO. DES PROD. ALIMENTAIRES AZOTES), (P.), B., 848.
 production of glue and gelatin from (KERNOT and SPEER), B., 557.
 working up of (STEINMANN), (P.), B., 848.
 autolytic and bacterial transformation of muscle proteins of (REED), B., 509.
 products, extraction of oil and glue water from (HOLTER and THUNE), (P.), B., 448.
 canned, formaldehyde in (DILL and CLARK), B., 339.
 elasmobranch, constituents of oils from (HEILBRON, KAMM, and OWENS), A., 816.
 marine, influence of asphyxiation on blood of (HALL, GRAY, and LEPKOVSKY), A., 634.
 Fish liver oils (HEILBRON, KAMM, and OWENS), A., 816.
 Fish meals (DAVIES), B., 212.
 Fish oils, characteristics of (LANGE), B., 199.
 unsaponifiable fraction of (WEIDEMANN), A., 980.
 importance of free fatty acids in, for chamoising (KLENOW), B., 599.
 detection of (TSUJIMOTO), B., 1020.
 Flame, propagation of, in gases (PAYMAN and WHEELER), A., 689.
 in gaseous explosions (STEVENS), A., 913.
 in mixtures of methane and air (CHAPMAN and WHEELER), B., 970.
 equilibria in (MARX), A., 1187.
 Bunsen, emission spectrum of (ELLIS), A., 1192.
 diffusion of salt vapours in (SYMON), A., 464.
 Flasks, Dewar, use of, in heat determinations (GRUBB), A., 265.
 Flavanthrone, recovery of antimony in manufacture of (ADAMSON, CARLETON, and DU PONT DE NEMOURS & CO.), (P.), B., 625.
 purification of (BRITISH DYE STUFFS CORP., BADDILEY, and SHEPHERDSON), (P.), B., 479.
 Flavone derivatives, synthesis of (ROBINSON and VENKATARAMAN), A., 1149.
 isoFlavone group, syntheses in the (BAKER and ROBINSON), A., 1253.
 Flavouring materials (BIJLSMA), A., 863.
 Flavylum chlorides, hydroxy- (ROBERTSON and ROBINSON), A., 1042.
 Flax, incrustations of (EHRlich and SCHUBERT), A., 547.
 retting of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 152; (AUSTERWEIL and PEUFAILLIT), (P.), B., 739* ; (THELLIER and Soc. POUR L'APPL. IND. DES BREVETS PEUFAILLIT), (P.), B., 783.
 with bacilli (RUSCHMANN and BAVENDAMM), B., 8.
 pectin content of (HONEYMAN), B., 187; (KIND), B., 911.
 plant, distribution of nitrogen in, and its elimination during manufacture (PORTER), B., 911.
 effect of variation in nitrogen supply on ratio of tops to roots in (TURNER), B., 601.
 fibres, treatment of (DUBOIS), (P.), B., 122.
 wax, constants of (HONEYMAN), B., 794.
 yarns, effect of sizes on elastic behaviour of (MATTHEW), B., 530.
 Flax yarns, and fabrics, action of concentrated sodium hydroxide solutions on (VIKTOROV and MALYUTIN), B., 1007.
 Flesh, pigments of (SCHUMM), A., 87, 193, 1268.
 Flies, effectiveness of some paraffin derivatives in attracting (COOK), B., 518.
 Flints, calcining as an aid to grinding of (MYERS), B., 157.
 potters', and their effects in white-ware bodies (PRESSLER and SHEARER), B., 540.
 Flint paper, manufacture of (KLEIN and BROWN), (P.), B., 948.
 Floor coverings, production of (SCHNEBLE), (P.), B., 1016.
 endurance of (GEISTER), B., 543.
 Floridin, spent, regeneration of (GURWITSCH), B., 348.
 Flotation, agent for (KLEES and COMBUSTION UTILITIES CORP.), (P.), B., 755.
 froth, of minerals, cause of (McLACHLAN), B., 96.
 apparatus for (MINERALS SEPARATION, LTD.), (P.), B., 675.
 Flour, purification of (PATROUILLEAU), (P.), B., 848.
 bleaching of (KROEBER and N. V. NOURY & VAN DEN LANDE), (P.), B., 106* ; (WALLACE & TIERNAN CO. and BAKER), (P.), B., 607*.
 production of gas for (STACEY), (P.), B., 339.
 bleaching and artificial maturation of (JAVILLIER), B., 211.
 treatment of (DUNLAP and INDUSTRIAL APPLIANCE CO.), (P.), B., 27.
 apparatus for (GUERRANT and INDUSTRIAL APPLIANCE CO.), (P.), B., 607.
 influence of storage on composition of (GREAVES and HIRST; GREAVES), B., 845.
 effects of fine grinding on (ALSBERG and GRIFFING), B., 381.
 effect on, of admixture of fennugreek seeds with wheat (FLEURENT), B., 418.
 improvement of baking properties of (MÜHLEN-CHEMIE G.M.B.H.), (P.), B., 896.
 ash (SWANSON; THOMPSON), B., 605.
 high-grade, production of, from maize (HÄUSLER), (P.), B., 297.
 self-raising, detection of tartaric acid in (LERRIGO), B., 460.
 wheat. See Wheat flour.
 white, nitrogen values of mixtures of animal foods with (MITCHELL and CARMAN), A., 754.
 determination of ash-content of (GOSKE), B., 295; (BRENDL), B., 1026.
 determination of degree of milling of, in bread (KALNINO), B., 563.
 determination of moisture in (SNYDER and SULLIVAN), B., 381.
 determination of unsaponifiable matter in (HERTWIG and BAILEY), B., 338.
 determination of, in sausages (SNETHLAGE), B., 963.
 Flow-meters, methyl salicylate as liquid in (FOSTER), B., 175.
 Flowers, production of perfumes from (I. G. FARBERIND.), (P.), B., 770.
 Flue dust containing lead, tin, and zinc, treatment of (METALLO-CHEM. WERKE RODLEBEN), (P.), B., 756.
 Flue-gases, device for measuring losses from (GENERAL ELECTRIC CO.), (P.), B., 777.
 Fluids, circulation of, under high pressure (McHAFFIE), B., 255, 567.
 See also Liquids.
 Fluoborates. See under Fluorine.
 Fluoran, tetrachloro-3-hydroxy-, and tetrachloro-3:4-dihydroxy-, and their salts and derivatives (ORNDORFF and JOHNSON), A., 1043.
 Fluoremetry (DESHA, SHERRILL, and HARRISON), A., 776.
 Fluorene, 2:5- and 2:7-diamino-, and their acetyl derivatives, and 2:5-dinitro- (MORGAN and THOMASON), A., 1239.
 9-iodo- (WANSCHIEDT), A., 1239.
 Fluorenes, 9-substituted, isomerism of (KIEGL, WÜNSCH, and WEIGELE), A., 612.
 Fluorenone, 2:5-dinitro- (MORGAN and THOMASON), A., 1239.
 Fluorenyl-*aa*-dinaphthylfluorene (WANSCHIEDT), A., 1239.
 Fluorescein, fluorescent radiation from (VALENTINER and RÖSSIGER), A., 558.
 fluorescence of, in acid solutions (BATSCHA), A., 335.
 detection of, with the fluoroscope (MARCELET), B., 527.
 Fluorescence (DIAR), A., 992.
 excitation of, by ultra-violet light (OLDENBERG), A., 992.
 relation between phosphorescence and (VAILOV and LEVSHIN), A., 335.
 relation between hydrogen-ion concentration and (DESHA, SHERRILL, and HARRISON), A., 776.
 thermal emission and (KENNARD), A., 1191.
 and reaction velocity (PERRIN and CHOUCROUN), A., 884.

- Fluorescence in the X-ray region** (AUGER), A., 659.
 from dye solutions, polarisation of (FRÖHLICH), A., 109.
 of synthetic tannins (GERNGROSS, BAN, and SANDOR), B., 23.
 of vegetable tanning extracts in ultra-violet light (GERNGROSS and SANDOR), B., 334.
 in biochemistry (FABRE), A., 100.
 of animal tissues (HARVEY), A., 1060.
 activated (RASETTI), A., 776.
 sensitised, dependence of, on added gas (LORIA), A., 1081.
- Fluorescent compounds, radiochemistry of** (CHOUCROUN), A., 885.
 molecules, mean life in the activated state of (PERRIN), A., 223.
- Fluorescope** (MARCELET), B., 527.
- Fluorine, preparation of** (LEBEAU and DAMIENS), A., 139.
 Zeeman effect in spectrum of (CARRAGAN), A., 987.
 potential of (RUFF and BUSCH), A., 129; (LORENZ), A., 478; (NEUMANN), A., 803.
 critical potential of (HOLWECK), A., 874.
 scattering of X-rays by (JAMES and RANDALL), A., 663.
 thermochemistry of (v. WARTENBERG and FITZNER; v. WARTENBERG), A., 476.
 oxidation with (FICHTER and HUMPERT), A., 699, 925.
 action of, on dry sulphate and hydrogen sulphates (FICHTER and HUMPERT), A., 699.
- Fluorine compounds, detection of, as preservatives in foodstuffs** (LÜHRIG), B., 847.
- Hydrofluoric acid, manufacture of** (BUCHNER), (P.), B., 915.
 ionisation potential of (KAPPANA), A., 661.
 free energy of (MORGAN and HILDEBRAND), A., 578.
 action of, on selenium and tellurium compounds (PRIDEAUX and MILLOTT), A., 258, 488.
- Fluorides, manufacture of** (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 360.
 crystal structure of (FERRARI), A., 664.
 acid, commercial, analysis of (ROPER and PRIDEAUX), B., 582.
 complex, production of metallic compounds from (MEYER-HOFER), (P.), B., 1013.
 soluble, production of (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 979.
 detection of, colorimetrically (DE BOER), A., 40.
 determination of (DE BOER and BASART), A., 590; (TREADWELL and KÖHL), A., 701.
- Fluoborates** (FUNK and BINDER), A., 1015.
- Fluosilicates, thermal dissociation of** (HANTKE), A., 1208.
- Hydrofluozirconic acid** (PRIDEAUX and ROPER), A., 587.
- Fluorine detection and determination:—**
 detection of, in organic compounds (LÜHRIG), A., 1068.
 determination of, in mixtures of fluorspar, sand and silicates (DUBIEL), B., 978.
 determination of, in ores (HAWLEY), B., 672.
- Fluorides.** See under Fluorine.
- Fluorite (fluorspar), reflexion of X-rays by** (MACINNES and SHEDLOVSKY), A., 459.
 Röntgen-ray spectra of (JAMES and RANDALL), A., 663.
 action of radium rays on (LEITMEIER; DOELTER), A., 367.
 X-ray absorption of calcium in (LINDSAY and VAN DYKE), A., 1186.
 analysis of (BAILLEUX), B., 1012.
 sand and silicates, analysis of mixtures of (DUBIEL), B., 978.
- Fluoroaluminates.** See under Aluminium.
- Fluosilicates.** See under Fluorine.
- Fluotaramite** (MOROZEWICZ), A., 266.
- Foam, stabilisation of** (ESSELEN and BADGER FIRE EXTINGUISHER Co.), (P.), B., 33.
- Foam meter** (WILLIAMS), B., 423.
- Foaming power and surface tension** (BARTSCH), A., 348.
- Fodder.** See Feeding-stuffs.
- Fogs, chemical, absorption of** (REMY), B., 255; (SILLE), B., 437.
- Foods, production of** (RICHARDSON and SWIFT & Co.; JONES and SWIFT & Co.), (P.), B., 993.
 direct refrigeration of (OTTESON), (P.), B., 27*.
 preservation of (SABALITSCHKA), (P.), B., 383.
 chlorinated water in canning and preserving of (SERGER), B., 564.
 surface activity and vitamin content of (v. HAHN), A., 760.
 increasing the nutritive value of (J. F. and G. DAUBEK), (P.), B., 766.
 energy values of (BENEDICT and FOX), A., 426.
 acid- and base-forming elements in (CLARK), B., 74.
 chromium steel resistant to acids of (ARMSTRONG and LUDLUM STEEL Co.), (P.), B., 695.
- Foods, flavouring materials in** (BIJLSMA), A., 863.
 iodine content in, of various districts (BLEYER), A., 638.
 nitrogen values of various (MITCHELL and CARMAN), A., 754.
 rare elements in (BERG), A., 195.
 canned, prevention of discoloration of (MORGAN, MURRAY, and CONTINENTAL CAN Co.), (P.), B., 214.
 vitamins in (EDDY, KOHMAN, and CARLSSON), B., 213.
 flesh, chemistry of (WRIGHT and BEVIS), B., 643.
 heat-sterilised, vitamins in (DUGDALE and MUNRO), B., 718.
 infant (KUFFERATH), B., 509.
 poultry and animal, manufacture of (LEWIS), (P.), B., 606.
 detection of colouring matters in (SOEP), B., 847.
 detection of saccharin in (SOEP), B., 847.
 determination of acids in (BEHRENS), B., 1027.
- Food pastes, determination of unsaponifiable matter in** (HERTWIG and BAILEY), B., 338.
- Food products, tin-plate for containers for** (SERGER), B., 418.
 made from meat (THOMSON and PICKETT), (P.), B., 689.
 Japanese, relative nutritive value of proteins in (SUZUKI, MATSUYAMA, and HASHIMOTO), B., 418.
 puffed (ANDERSON PUFFED RICE Co. and ANDERSON), (P.), B., 296.
 soluble, from fresh kola nut (A. & E. CHALAS), (P.), B., 213.
 determination of formic acid in (MORTON and SPENCER), B., 606.
- Foodstuffs, manufacture of, from yeast** (ENGEL), (P.), B., 297.
 incineration of (FORTNER), B., 688.
 loss of chlorine in (FILIPPO and ADRIANI; DROST), B., 847.
 phytin content of (AVERILL and KING), B., 381.
 vitamins in (EDDY), B., 718.
 Indian, milk production with (WARTH, SINGH, and HUSEIN), B., 993.
 detection of fluorine derivatives as preservatives in (LÜHRIG), B., 847.
 determination of copper in (LAMPITT, HUGHES, BILHAM, and FULLER), B., 719.
 determination of water in (KREIS), B., 338.
- Foot-and-mouth disease, manufacture of a remedy for** (VAN DER WAL), (P.), B., 341.
- Formaldehyde (methanal; formalin), preparation of** (TRAUTZ and UFER), A., 821.
 by reduction of carbonic acid (RUPP and SCHLEE), A., 1025.
 from methyl alcohol (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 463.
 manufacture of, from methane (BAKELITE GES. and HESSEN), (P.), B., 565.
 ultra-violet absorption spectrum of (HENRI and SCHOV), A., 774, 883.
 distillation of aqueous solutions of (BLAIR and TAYLOR), B., 339.
 partial vapour pressure of, in its aqueous solutions (LEDBURY and BLAIR), A., 235.
 decomposition of, by heat (MEDVEDEV and ROBINSON), A., 1010.
 electrolytic reduction of (SHIMA), A., 147.
 condensation of acetone, ammonium chloride, and (MANNICH and RITSERT), A., 504.
 action of secondary amines and, on acids (MANNICH and STEIN), A., 165.
 treatment of condensation products of carbamide and its derivatives and (POLLAK), (P.), B., 22.
 condensation of 9-methylacridine with (HOMBERGER and JENSEN), A., 526.
 interaction of methylamine, acetone, and (MANNICH and BALL), A., 522.
 action of, on methylthiouracil and its methyl ether (POETSCH and BEHREND), A., 739.
 condensation of phenols with (SOC. VERRERIES FOLEMBRAY; BRUHAT; ROPF), (P.), B., 955.
 condensation of, with phenols and urea (BARTHÉLEMY), B., 955.
 reaction of tryptophan with (KOMM), A., 1045.
 as an intermediate product of assimilation (KLEIN and WERNER), A., 439.
 polymerisation of, by *Elodea* (SABALITSCHKA and WEIDLING), A., 871.
 in canned marine products (DILL and CLARK), B., 339.
 tanning with (THOMAS, KELLY, and FOSTER), B., 290.
 recovery of casein and other proteins from compounds with (INTERNAT. GALALITH-GES. HOFF & Co., BARTELS, and EBERHARDT), (P.), B., 335.
 compounds of glycine with (KRAUSE), A., 276.
 thorium compound of reaction product of tyrosine and (CHEM. FABR. FLORA), (P.), B., 464.

- Formaldehyde**, 5-chloro-2,4-dinitrophenylhydrazone (MÜLLER and ZIMMERMANN), A., 163.
 bisulphite, constitution of (RASCHIG), A., 599.
 sodium hydrogen sulphite and sulphurous acid compounds of, and their determination (LEDBURY and TAYLOR), B., 511.
 detection of (ALOY, VALDIGUIÉ, and ALOY), A., 850.
 detection of small quantities of (SABALITSCHKA and HARNISCH), A., 853.
 detection and determination of, in fermentations (MAURER), A., 869.
 determination of, with sodium sulphite (TÄUFEL and WAGNER), A., 535.
- Formals**, velocity of hydrolysis of (SKRABAL and EGER), A., 1010.
 mixed, synthesis of (BLANCHARD), A., 1123.
- Formamide**, manufacture of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 219*, 514*, 770.
- Formamidines**, reactions of (DAINS and DAVIS), A., 530.
- Formatoferric bromide and chloride** (WEINLAND and ENGEL), A., 498.
- Formazyl**, amino-, amino- α -bromo-, amino- α -chloro-, and nitro-, and their derivatives (BAMBERGER, PADOVA, and ORMEROD), A., 416.
- Formazyl compounds** (BUSCH and PFEIFFER), A., 831.
- Formazylmercaptan**, and its salts (BAMBERGER, PADOVA, and ORMEROD), A., 416.
- Formazyl-p-methoxybenzene** (BUSCH and PFEIFFER), A., 831.
- Formazyl-m-nitrobenzene** (BUSCH and PFEIFFER), A., 831.
- Formhydroxamic acid**, amino-, benzoyl derivative (GASTALDI, LONGIAVE, and SIRICANA), A., 1247.
- Formhydroxamic acid**, benzyl ester (HOUBEN and PFANKUCH), A., 1236.
- Formic acid**, absorption spectrum of vapour of (HARRIS), A., 1079.
 ultra-violet absorption spectrum and dissociation of (RAMSPERGER and PORTER), A., 659.
 dehydration of (CHEM. FABR. VORM. SCHERING), (P.), B., 931.
 decomposition of, by ultra-violet light (MÜLLER and HENTSCHEL), A., 1124.
 thermal decomposition of (NELSON and ENGELDER), A., 692.
 catalytic decomposition of (WESCOTT and ENGELDER), A., 693.
 catalytic fission and oxidation of (PAAL, POETHKE, and PROSS), A., 936.
 pyrogenic decomposition of (MULLER and PEYTRAL), A., 936.
 velocity of reaction of bromine with (HAMMICK, HUTCHISON, and SNELL), A., 32.
 velocity of reaction of iodine with (HAMMICK and ZVEGINTZOV), A., 691.
 as coagulant for *Hevea* latex (DE VRIES, SPOON, and RIEBL), B., 203.
 aluminium, manganese, and thorium salts, and complex salts of the latter (WEINLAND and STARK), A., 498.
 chromic salt (AGENO-VALLA), A., 936.
 gadolinium salt (SARKAR), A., 1218.
 sodium salt, manufacture of, from carbon monoxide (ENDERLI and KOEFF & Co.), (P.), B., 323*.
 reduction of silver acetate by (COUTIE), A., 580.
 sodium hydrogen salt, preparation of (KOEFF & Co. and ELÖD), (P.), B., 772.
 esters, preparation of (FARBW. VORM. MEISTER, LUCIUS, & BRÜNINO), (P.), B., 513.
 azeotropy of (HANNOTTE), A., 671.
 alkyl esters, manufacture of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 462, 646*.
 p-cumyl ester (BERT), A., 285.
 dimethyl- and methylethyl-glyceryl esters (DELABY and MOREL), A., 498.
 methyl ester, equilibrium between methyl alcohol and (CHRISTIANSEN), A., 358.
 determination of, in food products (MORTON and SPENCER), B., 606.
- Formic acid**, chloro-, ethyl ester, action of sodioisatin on (HELLER and LAUTH), A., 957.
 imino-, esters of, and their hydrochlorides (HOUBEN and PFANKUCH), A., 1236.
 trithio-, ethylene ester (HURTLEY and SMILES), A., 1150.
- Formiminic acid**. See **Formic acid**, imino-.
- Formolites**, solubility of (KOSTRIN), B., 475.
- Formyldimethylpyrrolecarboxylic acids**, thio-, ethyl esters (FISCHER and STERN), A., 303.
- Formylglycine**, action of aluminium amalgam on (FODOR and FRANKEL), A., 1234.
- 1-Formylindole** (PUTOCHIN), A., 1151.
- dl-Formyl-leucine**, action of aluminium amalgam on (FODOR and FRANKEL), A., 1234.
- Formylmethylenebisacetacetic acid**, ethyl ester (WEST), A., 49.
- 5-Formyl-3-methyl-4²-cyclohexen-1-one-4:5-dicarboxylic acid**, ethyl ester, aldoxime (WEST), A., 49.
- Formyl- β -3-methoxy-4-benzyloxyphenylethylformamide** (AKABORI), A., 957.
- Formylphenylacetic acid**, ethyl ester, absorption spectra of (MORTON and ROGERS), A., 454.
- 4-Formyl-1-phenyl-2:5-dimethylpyrrole-5-carboxylic acid**, 4-thio-, ethyl ester (FISCHER and STERN), A., 303.
- 4-Formyl-1-p-tolyl-2:5-dimethylpyrrole-3-carboxylic acid**, 4-thio-, ethyl ester (FISCHER and STERN), A., 303.
- Fowls**, effect of insulin on (CASSIDY, DWORKIN, and FINNEY), A., 436.
- Fractionation column** (MÜLLER; LOVELESS), A., 931.
- Freezing point** (FOOTE and LEOPOLD), A., 117.
 lowering of, at infinite dilution (RANDALL), A., 1207.
 of dilute solutions of electrolytes in cyclohexanol (SCHREINER and FRIVOLD), A., 1208.
- Fries' reaction**, migration of the methyl group in (v. AUWERS, BUNDESMANN, and WIENERS), A., 608.
- Frogs**, breakdown of proteins in, after liver extirpation (PRZYLECKI), A., 318.
- γ -Fructose**, structure of (HAWORTH and HIRST), A., 1126.
- Fruit**, preservation of (FULTON and BOWMAN), (P.), B., 27; (KLACH), (P.), B., 213.
 prevention of decay in (BARGER and HAWKINS), (P.), B., 993.
 fermentation of (MATZKA), (P.), B., 1027.
 canned, "blowing" of (MONIER-WILLIAMS), B., 801.
 fresh, preservation of (FULTON and BOWMAN), (P.), B., 339.
- Fruit juices**, preparation of (PIERCE), (P.), B., 141*.
 concentration and drying of (DICKERSON and INDUSTRIAL WASTE PRODS. CORP.), (P.), B., 106.
 examination of (ECKART and DIEM), B., 460.
- Fruit-juice products**, manufacture of (WELCH and INTERNAT. PRECIPITATION CO.), (P.), B., 896.
- Fruit products**, detection and determination of lactic acid in (NELSON), B., 895.
- Fruit spurs**, constituents of (KRAYBILL, POTTER, WENTWORTH, BLOOD, and SULLIVAN; HARLEY), A., 1065.
- Fruit-type products**, highly-coloured, determination of acidity of (BADGER and SALE), A., 895.
- Fuel or Fuels**, manufacture of (TRENT), (P.), B., 263*; (DAY), (P.), B., 732.
 drying of (BERL), (P.), B., 308.
 with electrical precipitation of dust (SIEMENS-SCHUCKERTWERKE), (P.), B., 523.
 apparatus for (INTERNAT. COMBUSTION ENGINEERING CORP. and KREISINGER), (P.), B., 353*.
 drying and distillation of (DRAWE), (P.), B., 573.
 drying and low-temperature carbonisation of (DRAWE), (P.), B., 940.
 dryers for (KREISINGER and COMBUSTION ENGINEERING CORP.), B., 117.
 preheating of, prior to carbonisation of (RUDE), (P.), B., 699.
 carbonisation of (KRAUSS), (P.), B., 117; (RUDE), (P.), B., 119, 429; (ILLINGWORTH, ILLINGWORTH CARBONIZATION CO., DEMPSTER & SONS, and TOOGOOD), (P.), B., 228; (MERZ & McLELLAN and RILEY), (P.), B., 429.
 carbonisation, distillation, and gasification of (ROUX), (P.), B., 524.
 apparatus for carbonisation and gasification of (ZEIDLER), (P.), B., 861.
 distillation of (HÉRENG), (P.), B., 38; (MERZ & McLELLAN and WEEKS; PLASSMANN), (P.), B., 572.
 low-temperature (METALLBANK & METALLURGISCHE GES.), (P.), B., 971.
 pulverisation, feeding, and burning of (CRITES and RAYMOND BROS. IMPACT PULVERIZER CO.), (P.), B., 117, 263*.
 burning of (FULLER FUEL CO. and KAEMMERLING), (P.), B., 228.
 burner apparatus for combustion of (MOND and PEABODY), (P.), B., 655.
 friability tests of (NICOLLS), B., 697.
 analysis of, by means of magnetic rotation (JACOB), A., 374.
 oxygen bomb determinations of calorific value of (BRADLEY, ROSECRANS, and CORBIN), B., 346.
 determination of unburnt carbon of, from analysis of flue-gases (CHAPMAN), B., 347.

- Fuel or Fuels, determination of sulphur in, by oxygen bomb method (BRADLEY, CORBIN, and FLOYD), B., 616.
- Fuel or Fuels, agglomerated, manufacture of (LIAIS), (P.), B., 907.
- artificial (SUMMERS), (P.), B., 395.
- ash-containing, combustion of (HAWLEY and PEOPLE'S SAVINGS & TRUST Co.), (P.), B., 732.
- bituminous, carbonisation of (BESTA), (P.), B., 232*.
- distillation of (LASCHE and KOHLENVEREDLUNG GES.; PRITZBUER), (P.), B., 732.
- complete gasification (BREISIG), (P.), B., 908*.
- dust-like (BRANDES), (P.), B., 232*.
- carbonised, apparatus for (TRUMBLE), (P.), B., 699.
- gaseous (HARRIS), (P.), B., 119, 524, 573, 862; (I. G. FARBEN-IND.), (P.), B., 862.
- gaseous or liquid, apparatus for combustion of (PEABODY), (P.), B., 624*.
- gaseous or pulverised, apparatus for combustion of (PEABODY), (P.), B., 624*.
- for internal-combustion engines (HOWARD, and STANDARD DEVELOPMENT Co.), (P.), B., 700; (COSTAGUTA), (P.), B., 733*; (CHANDLER), (P.), B., 863; (RIEDEL A.-G.; ASIATIC PETROLEUM Co. and KEWLEY), (P.), B., 1004.
- production of light oils as (BRUTZKUS), B., 654.
- liquid (DE LA RIBOISIÈRE), (P.), B., 6.
- from distillation of calcium soap of soya-bean oil (SATO and TSUNG), B., 731.
- purification of (SOC. DE RECHERCHES ET PERFECTIONNEMENTS IND.), (P.), B., 147.
- burners for (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 527*; (KNUDSEN), (P.), B., 941.
- determination of sulphur in (DE FAZI), B., 971.
- heavy liquid, gasification of, for use in internal-combustion engines (DIAZ), (P.), B., 654.
- mixed, production of (BUTLER, ROBINSON, and PARKES), (P.), B., 572, 780*.
- motor (RIEDEL), (P.), B., 147; (GEN. MOTORS CORP.; LIQUID), (P.), B., 183; (HAMMOND and FUEL DEVELOPMENT CORP.; MCKEE), (P.), B., 230; (MOROAN), (P.), B., 232*; (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 263; (CANADIAN ELECTRO PRODUCTS Co.), (P.), B., 430; (MIDDLELEY and GEN. MOTORS CORP.), (P.), B., 430, 779; (FLORES; DE SARIGNY; DIETZ), (P.), B., 524; (NIKAIDO), (P.), B., 574; (ALLGEM. GES. F. CHEM. IND.; MACKILLIGIN and GARLAND; BABB and WAVERLY OIL WORKS Co.), (P.), B., 621; (EDELEANU), (P.), B., 622; (CARROLL and ELLIOTT), (P.), B., 699; (ESSELEN and UNITED FRUIT Co.; BEATTIE; SOC. ANON. HYDRO-CARBURES ET DÉRIVÉS), (P.), B., 733; (NILSON), (P.), B., 862; (BENZOL-VERBAND GES.), (P.), B., 863.
- manufacture of (BROOKS and CARBIDE & CARBON CHEMICALS CORP.), (P.), B., 120; (DE FLOREZ and TEXAS Co.), (P.), B., 120*; (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 202; (HIRSH), (P.), 1006.
- produced by hydrogenation of coal (ORMANDY and CRAVEN), B., 394.
- from carbon monoxide and hydrogen (ELVINS and NASH), B., 570.
- ultra-violet spectroscopy of flames of (CLARK and THEE), B., 522.
- fractionation number of (OSTWALD), B., 810.
- equilibrium boiling points of (WHATMOUGH), B., 181, 653.
- increasing the calorific power of (COSTAGUTA), (P.), B., 430.
- ignition of, by adiabatic compression (PIGNOT), B., 260.
- detonation of (CALENDAR, KING, and SIMS), B., 618.
- anti-knock mixtures for (MIDDLELEY and GEN. MOTORS CORP.), (P.), B., 524; (CHARCH, MACK, and BOORD), B., 570.
- iron carbonyl as anti-knock substance for (OSTWALD), B., 571.
- mixtures containing iron carbonyl as (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 309.
- treatment of (MIDDLELEY and GEN. MOTORS CORP.), (P.), B., 779.
- improvement of (STEVENS, MARLEY, GRUSE, and GULF REFINING Co.), (P.), B., 779.
- utilisation of (MIDDLELEY and GEN. MOTORS CORP.), (P.), B., 264*.
- valuation of (MOORE), B., 227.
- effect of water on aniline point of (ORMANDY and CRAVEN), B., 395.
- anti-knock, from shale oil (MORRELL and EGLOFF), B., 810.
- motor, low-compression, utilisation of (MIDDLELEY and GEN. MOTORS CORP.), (P.), B., 396.
- Fuel or Fuels, mixed, vapour pressure of (LEWIS), B., 395.
- determination of unsaturated hydrocarbons in (BRAME), B., 395, 619; (DUNSTAN; LOMAX and PEMBERTON; MOORE; GARNER), B., 395.
- determination of unsaturated, aromatic, naphthene, and paraffin hydrocarbons in (EGLOFF and MORRELL), B., 570.
- determination of lead tetrathyl in (FERRERI), B., 181.
- oil, preparation of (RUDIGIER and STANDARD DEVELOPMENT Co.), (P.), B., 862.
- powdered, drying of (IMRAY and INTERNAT. COMBUSTION ENGINEERING CORP.), (P.), B., 649.
- burning of (BERGMAN), (P.), B., 117; (KREISINGER, ANDERSON, BELL, and INTERNAT. COMBUSTION ENGINEERING CORP.), (P.), B., 523; (PEABODY), (P.), B., 907.
- combustion, gasification, or degasification of (SZIKLA), (P.), B., 621.
- ash from installations using (DUNN), B., 305.
- furnaces fired with (VOGT and KIRCHHOFF), (P.), B., 473.
- solid or atomised liquid, combustion, gasification, or degasification of (SZIKLA), (P.), B., 572.
- solid, distillation of (HAENNIG), (P.), B., 182.
- combustion of (DE CONINCK), (P.), B., 431*.
- importance of combustibility of the coke in combustion of (KREULEN), B., 225.
- gas yield of, as a criterion of their combustibility (DOLCH), B., 651.
- bituminous, distillation of (ROSENTHAL and PINTSOH, A.-G.), (P.), B., 701*.
- determination of moisture in (KREULEN), B., 969.
- determination of volatile matter in (KREULEN), B., 968.
- Fuel briquettes. See under Briquettes.
- Fuel gases. See under Gases.
- Fukugetin, and its acetyl derivatives (SHINODA), A., 1253.
- Fukugi, colouring matter of (SHINODA), A., 1253.
- Fuller's earth. See under Earths.
- Fulminic acid, salts, decomposition potentials of (BIRCKENBACH and KELLERMANN), A., 30.
- mercury salt, explosion spectrum of (PETRIKALN), A., 774.
- water of crystallisation of (KAST and SELLE), A., 1129.
- Fumaric acid, biochemical synthesis of, from pyruvic acid (GOTT-SCHALK), A., 545.
- effect of colloidal sulphur on formation of, from maleic acid (FREUNDLICH and SCHIKORR), A., 481.
- velocity of addition of sulphites to (VAN DEN ZANDEN), A., 691.
- thallous salt (CHRISTIE and MENZIES), A., 55.
- Fumaric acid, diiodo-, preparation of (EICHELBARGER), A., 713.
- Fumes, effect of turbulent air motion and of humidity on the stability of (DRINKER, THOMSON, and FINN), B., 726.
- photometric methods for study and estimation of (DRINKER, THOMSON, and FINN), B., 222.
- removal of (FORGAN-POTTS and CHADWICK), (P.), B., 808.
- Fumigants (BUCHANAN and AMER. CYANAMID Co.), (P.), B., 726; (BUCHANAN), (P.), B., 998.
- Fumigation (LANDIS, BUCHANAN, and AMER. CYANAMID Co.), (P.), B., 30.
- mixtures, diffusion of, through building materials (THILENIUS and POHL), B., 30.
- Fungi growing on coal (IWASAKI), B., 393.
- decomposition of cellulose by (HEUKELEKIAN and WAKSMAN), B., 101.
- colouring matters of (KÖGL), A., 407.
- assimilation of nitrates by (KLEIN, EIGNER, and MÜLLER), A., 1280.
- new oxydase in (WOLFF), A., 322.
- lower, production of carbamide by (IVANOV), A., 97.
- mould, growth of, on sizing and finishing materials (MORRIS), B., 186.
- on steeped wheat flour (MORRIS), B., 187.
- Fungicides (PIVER), (P.), B., 71; (HEDENBURG and MOBURG), (P.), B., 208; (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 458; (HOLTON and SHERWIN-WILLIAMS Co.), (P.), B., 507; (MOORE and VREELAND), (P.), B., 685; (JACOBSEN), (P.), B., 1025.
- fifty years of (HOLTON), B., 843.
- manufacture of (VIDAL; CHEM. FABR. v. HEYDEN), (P.), B., 960.
- manufacture of media for (FARBENFABR. VORM. BAYER & Co.), (P.), B., 927.
- from sulphite-cellulose waste lye (SCHLUMBERGER), (P.), B., 694.
- colourless material for increasing the adhesiveness of (SONNE), (P.), B., 893.

- Fungicides, dust and spray, adherence to foliage of sulphur in (THATCHER and STREETER), B., 416.
hydrated lime-acid lead arsenate, rôle of calcium hydroxide in (CAMPBELL), B., 506.
- Fungicidal properties of spray fluids (GOODWIN, MARTIN, and SALMON), B., 506.
- Furs, preparation of, for shrinking and felting (MARTIN), (P.), B., 913.
bleaching of. See under Bleaching.
dyeing of. See under Dyeing.
protection of, from moths (NAEFE), (P.), B., 47; (FARB. VORM. BAEYER & Co.), (P.), B., 49*.
- Furan, physiological action of (KOCH and CAHAN), A., 91.
- Furfuraldehyde, critical constants of (EVANS and AYLESWORTH), A., 232.
synthetic resins from (STOKES), (P.), B., 137.
action of sodamide on (KASIWAGI), A., 728.
colour reactions of alkaloids with (EKKERT), A., 533.
derivatives of (KASIWAGI), A., 842, 1149.
as rubber accelerators (TRICKEY and LEUCK), B., 890.
m-iodophenylhydrazones (VOTOČEK, ETTTEL, and KOPPOVA), A., 501.
- Furfuraldehydes (KÖNIG and HEY), A., 175.
- Furfuroic acid, esters of (ZANETTI and BECKMANN), A., 620.
- Furfuryl alcohol, naphthylurethane from (BICKEL and FRENCH), A., 517.
- 2-*a*-Furfurylbenzthiazole (BOGERT and STULL), A., 183.
- 5-Furfurylidene-2:3-diphenylisothiohydantoin (HANN and MARKLEY), A., 623.
- Furnaces (IVANOVSKY), (P.), B., 114; (VICKERS & INTERNAT. COMBUSTION ENGINEERING and ROSENCRANTS), (P.), B., 145*;
(CANNON; SEEBER), (P.), B., 424; (MURRAY; WOODS), (P.), B., 937; (TROCKNUNGS-, VERSCHWELUNGS-, & VERGASUNGS-GES.M.B.H., HONIGMANN, and BARTLING), (P.), B., 999; (RYNER), (P.), B., 1000.
apparatus for automatic regulation of (VERNEY), B., 935.
means for charging (DUCATEL), (P.), B., 742.
supply of air to (CROWCROFT; ROUCKA), (P.), B., 521*.
heating the blast for (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 856.
for high-temperature chemical reactions (HAMBURGER, PRINS, and N. V. STIKSTOFBINDINGSIND "NEDERLAND"), (P.), B., 857.
for heating at low temperatures (PUENING), (P.), B., 519.
for reheating (SMALLWOOD and FALLON), (P.), B., 792.
exchangeable arch for (JÜRGES), (P.), B., 1000.
removal of residue from (SCHWABACH), (P.), B., 224*.
air seals for, with travelling grates (WINTER and KLEB & BARK), (P.), B., 904.
for separation of components of alloys (HÜTTENWERKE TEMPELHOF MEYER), (P.), B., 754.
fired with coal dust, etc. (VOGT and KIRCHHOFF), (P.), B., 473.
combined with gas-producers for steam generators (WOLLASTON), (P.), B., 84.
for liquid fuel (LAING), (P.), B., 696.
for pulverised fuel (UNDERFEED STOKER Co. and WOOD), (P.), B., 2.
for powdered or liquid fuels (HARVEY), (P.), B., 807.
for glass manufacture (ARBEIT and MANUF. DES GLACES & PROD. CHIM. DE ST. GOBAIN, CHAUNY & CREY), (P.), B., 747*.
for melting metals (HALL), (P.), B., 134*, 164*.
for treating ores, continuous (JOBSON and SOUDER), (P.), B., 369.
for burning refractory products (MALVOS and CROZEMARIE), (P.), B., 408.
- Furnaces, annealing (COLE and WESTINGHOUSE ELECTRIC & MANUF. Co.), (P.), B., 224; (GRÜNEWALD), (P.), B., 445*;
(UNITED GLASS BOTTLE MANUFACTURERS, LTD. and PRYOR), (P.), B., 1014.
annular, with revolving hearth (HONIGMANN), (P.), B., 521*.
blast (KENNEDY), (P.), B., 984.
operation of (HALBERGERHÜTTE), (P.), B., 162; (LANCE), (P.), B., 548.
specific efficiency of (FRANCHOT), B., 880.
direct reduction of coke in (HOLLINGS), B., 490.
effect of physical properties of ore and coke on capacity of (JOSEPH, ROYSTER, and KINNEY), (P.), B., 409.
pyrophoric properties of flue-dust from (HOFMANN), B., 748.
purification of gases from (W. and H. MATHESIUS), (P.), B., 862.
effect of scrap on the working of (BORMANN), B., 130.
- Furnaces, boiler, using powdered fuel (KOHLENSCHIEDUNGS. GES.), (P.), B., 224; (HOLD), (P.), B., 256*.
with mechanical grates, combustion of volatile matter in (KAMMERER), B., 569.
closed (STEENSTRUP and GEN. ELECTRIC Co.), (P.), B., 224*.
coal dust (HAYN), (P.), B., 3*.
coke-fired, resistance to flow of gases in fuel-bed of (TRAVERS), B., 305.
cupola (POUMAY), (P.), B., 132.
with hot blast apparatus (VANDERSTEIN), (P.), B., 246*.
drying (BROCKWAY), (P.), B., 425.
electric (SECHOWSKI), (P.), B., 65; (KUNZE), (P.), B., 66;
(UNGER and GEN. ELECTRIC Co.), (P.), B., 134; (EVREYNOFF), (P.), B., 134, 592*;
(GRAUEL), (P.), B., 164; (LOKE), (P.), B., 447*;
(SCOVILL MANUF. Co.), (P.), B., 592; (SIEMENS & HALSKE A.-G.; BRITISH THOMSON-HOUSTON Co. and IPSEN), (P.), B., 676; (NAUGLE), (P.), B., 835; (TAYLOR), (P.), B., 922; (KIDDLE), (P.), B., 985.
theory of (DE LOISY), B., 635.
operation of (HARSH and LEEDS & NORTHRUP Co.), (P.), B., 446.
physico-chemical methods for control of (SCHLUMBERGER), B., 18.
temperature-controlling devices for (BRITISH THOMSON-HOUSTON Co. and PAYMAN), (P.), B., 794.
automatic interruption of current supply to (RHEINISCHE METALLWAAREN- & MASCHINENFABR.), (P.), B., 98*.
heating coils for (BRITISH THOMSON-HOUSTON Co. and KEENAN), (P.), B., 793.
thermal insulation of (HARTMANN and WESTMONT), B., 953.
electrodes for (SIEMENS & Co.), (P.), B., 886.
electrode connexions for (MCGEE), (P.), B., 447*.
refractories for, from tungsten powder (HÄRDÉN), B., 922.
for bright annealing (SIEMENS-SCHUCKERTWERKE, HERAEUS-VACUUM-SCHMELZE A.-G., and ROHN), (P.), B., 834.
for treatment of comminuted material (NAUGLE), (P.), B., 922.
manufacture of metals and alloys in (GRÖNWALL), (P.), B., 548.
melting of non-ferrous metals in (TAMA), B., 161.
for reactions between solids or liquids and gases (JULLIEN), (P.), B., 19.
arc (KOSTKA and RHEINISCHE METALLWAAREN- & MASCHINENFABR.), (P.), B., 65; (DIXON and PITTSBURGH RESEARCH CORP.), (P.), B., 331.
high-frequency (WESTINGHOUSE LAMP Co., RENTSCHLER, and MARDEN), (P.), B., 497; (LORENZ A.-G.), (P.), B., 985.
yield of, with alternating current (RIBAUD), B., 834.
high-frequency induction (CAMPBELL), B., 164*;
(WEVER), B., 549; (LANGMUIR and GEN. ELECTRIC Co.), (P.), B., 551; (BURCH, DAVIS, and METROPOLITAN-VICKERS ELECTRIC Co.), (P.), B., 636, 757.
for very high temperatures (RIBAUD), B., 64.
high-temperature (LÖWENSTEIN), A., 706.
induction (NORTHRUP), B., 283; (SEEDER and GEN. ELECTRIC Co.; UNGER and GEN. ELECTRIC Co.; WEED and GEN. ELECTRIC Co.; FACCIOLI and GEN. ELECTRIC Co.), (P.), B., 886; (BRAYTON and INDUCTION FURNACE Co.), (P.), B., 985.
refractories for (UNGER), B., 952.
laboratory (REINER), A., 1021.
for high temperatures (J. & W. B. MITCHELL), B., 445*.
melting (COE and AMER. BRASS Co.), (P.), B., 886.
resistance (TAYLOR and ELECTRIC FURNACE Co.), (P.), B., 331; (ANDERSEN and TROLLHÄTTANS ELEKTROTHERM. AKTIEBOLAG), (P.), B., 498.
high-temperature (FRYTHERRCH), (P.), B., 19.
rotary, carburisation in (MARTIN), B., 982.
vacuum (PARTINGTON and ANFILOGOFF), A., 41.
sealing of (BRITISH THOMSON-HOUSTON Co. and MASSEY), (P.), B., 34*.
gas-fired (ASKANIA WERKE), (P.), B., 178*, 224*.
gas-producer (RAINCHON), (P.), B., 734.
high-frequency dielectric and magnetic (ALLCUTT and WESTINGHOUSE ELECTRIC & MANUF. Co.), (P.), B., 497.
industrial, oil-burning equipment for (MAWHINNEY), B., 807.
laboratory, for testing refractories under load (HÄLSER), B., 158.
metallurgical (BREITENBACH), (P.), B., 132; (TALBOT), (P.), B., 246*;
(HELFFENSTEIN and HELFFENSTEIN ELEKTRO-OFFEN GES.), (P.), B., 754; (BREYER and NEW JERSEY ZINC Co.), (P.), B., 832.

- Furnaces, metallurgical, recovery of sulphur from waste gases of (WILL), B., 672.
 muffle, for heat treatment of metals (LLOYD, WALTER, and PALSER), (P.), B., 97*.
 open-hearth (DAVIES), (P.), B., 97; (BOSSHARDT), (P.), B., 411.
 construction of walls of (OPEN-HEARTH COMBUSTION Co. and NAISMITH), (P.), B., 792.
 agitation of molten metal in (EDWARDS), (P.), B., 549*.
 oxy-acetylene fusion (GORTON and GROVES), B., 127.
 powdered fuel, utilisation of liquid slag from (POLYSIUS EISEN-GIESSEREI & MASCHINENFABR.), (P.), B., 430.
 boiler (HOLD), (P.), B., 426*.
 combined powdered-fuel and grate (HOLD), (P.), B., 305.
 puddling, reverberatory (LOWNDES), (P.), B., 283.
 regenerative, reversal and control of (MORGAN CONSTRUCTION Co.), (P.), B., 1000.
 retort. See Retort furnaces.
 reverberatory (VERSEN), (P.), B., 695.
 operation of (MEHNER), (P.), B., 2*.
 roasting (BUBAR), (P.), B., 424.
 rotary (PEHRSON), (P.), B., 224*, 305*.
 for burning cement (SCHMID), (P.), B., 918.
 for molten material (DE BETHUNE), (P.), B., 857.
 shaft, theory of (LE CHATELIER), B., 391.
 discharging device for (SOBEK), (P.), B., 616*.
 grates for (CORNET), (P.), B., 34*.
 for burning limestone, etc. (CORNET), (P.), B., 320.
 electrically heated (GREENAWALT), (P.), B., 591.
 Siemens-Martin, behaviour of sulphur contained in producer-gas in (BROWN), B., 410.
 smelting (CHURCH and UNITED VERDE EXTENSION MINING Co.; PRINCE, DOUGLAS, and UNITED VERDE EXTENSION MINING Co.), (P.), B., 17.
 smelting or heating, fired with coal dust (VOGT and KIRCHHOFF), (P.), B., 246*.
 tilting, for fusing basalt (DHÉ), (P.), B., 129.
 smelting (CAMPBELL, GIFFORD, and HIRSCH KUPFER- & MESSINGWERKE), (P.), B., 64*.
 tin plate, continuous (JONES), (P.), B., 1018.
 tunnel, fuel-feeding device for (MONNIER), (P.), B., 275*.
 Furnace crucibles (UNGER and GEN. ELECTRIC Co.), (P.), B., 886.
 Furnace linings (ARAM), (P.), B., 519.
 Furoic acid, furfuryl ester, dimorphism of (ZANETTI and KERR), A., 564.
 α -Furoylpiperonylcarbonyl benzoate (GREENE), A., 407.
 2-Furylacetaldehyde, and its oxime (KÖNIG and HEY), A., 175.
 α -Furyl- $\delta\delta$ -dimethyl- $\Delta\alpha$ -penten- γ -one (KASIWAGI), A., 842.
 η -2-Furylheptatrienal, and its phenylhydrazone (KÖNIG and HEY), A., 175.
 Furyl ketones, spectrographic study of (KASIWAGI), A., 1149.
 α -Furyl- β -methyl- γ -pentanone (KASIWAGI), A., 842.
 α -Furylmethyl- $\Delta\alpha$ -penten- γ -ones (KASIWAGI), A., 842.
 α -Furyl-2:4:6-trinitrophenylethylene (PASTAK), A., 392.
 ϵ -2-Furylpentadienal, and its derivatives (KÖNIG and HEY), A., 175.
 α -Furyl- γ -pentanone (KASIWAGI), A., 842.
 α -Furyl- $\Delta\alpha$ -penten- γ -one, and its semicarbazone (KASIWAGI), A., 842.
Fusarium, action of enzymes of (SIBILLA), A., 645.
 Fusel oil, pyrogenic dehydration of (GIUA and THUMIGER), B., 687.
 Fusion pot (BABASINIAN and BILLINGER), B., 471.
- G:
- Gadolinite, X-ray analysis of (GOLDSCHMIDT), A., 996; GÜNTHER and WILCKE), A., 997.
 Gadolinium salts (SARKAR), A., 1218.
d-Galacto-*d*-arabinose, and its derivatives (ZEMPLÉN), A., 1229.
d-Galacto-*d*-erythrose (ZEMPLÉN), A., 1229.
d-Galactonic acid, preparation of (KILIANI), A., 940.
 derivatives of (KILIANI), A., 52.
 Galactose, fermentation of, by yeast (SÖHNGEN and COOLHAAS), A., 1177.
 after pre-treatment (v. EULER and NILSSON), A., 544.
 effect of growth of yeast on (ABDERHALDEN), A., 544.
 assimilation of, in fasting and on protein-fat diet (NAGASAYE), A., 1055.
- Galactose diisopropylidene ether, constitution of (SVANBERG), A., 714.
 constitution of, and its acetate (OHLE and BEREND), A., 150.
 diisopropylidene and methyl ethers, and their derivatives (FREUDENBERG and SMEYKAL), A., 274.
 hydrazones and osazones of (VOTOČEK, ETTTEL, and KOPPOVA), A., 501.
 Galactose-*B* (RIIBER and MINSAAS), A., 1228.
d-Galactose, oxidation of (EVANS and BUCHLER), A., 149.
 action of potassium hydroxide on (EVANS, EDGAR, and HOFF), A., 1228.
 isolation of, from urine in hepatic insufficiency (HALBERKANN and KÄHLER), A., 859.
 Galactosidoglucose, structure of (SCHLUBACH and RAUCHENBERGER), A., 1127.
 Galactosyl- ζ -trimethylammonium iodide (FREUDENBERG and SMEYKAL), A., 274.
 Galacturonic acid, determination of, in pectin (DORE), B., 171.
d-Galacturonic acid, phenylhydrazine salt of phenylosazone of (OHLE and BEREND), A., 150.
 Galegine, synthesis of, and its derivatives (SPÄTH and SPITZKY), A., 81.
 Galena crystals (OGAWA, NEMOTO, and KANEKO), B., 946.
 detection of wireless waves at the crystal faces of (GAUBERT), A., 229.
 manufacture of pigments from (MORGANS), (P.), B., 595.
Galium aparine, asperuloside from (HÉRISSEY), A., 547.
 Gallacetophenone, ferric salt (ZETTSCHKE and LOOSLI), A., 67.
 Gallic acid, aluminium salt (ZETTSCHKE and LOOSLI), A., 67.
 and its esters and amide, antimonyl compounds of (CHRISTIANSEN), A., 722.
 compounds of, with molybdic and tungstic acids (WEINLAND, BABEL, GROSS, and MAI), A., 397.
 benzoyl derivatives (CHRISTIANSEN), A., 725.
n-butyl and isopropyl esters (CHRISTIANSEN), A., 725.
 Gallium from germanite (KEIL), A., 589.
 refining of (BOYER and GEN. ELECTRIC Co.), (P.), B., 412.
 vapour, ultra-violet absorption spectra of (FRAYNE and SMITH), A., 214.
 Galvanising, hot, apparatus for (IMHOFF and SMITH), (P.), B., 196.
 Galvanising baths (PFANHAUSER and LANGBEIN-PFANHAUSER-WERKE), (P.), B., 953.
 Garbage tankage, availability of nitrogen in (PRINCE and WINSOR), B., 458.
 Gas, fifty years of chemistry of (FULWEILER), B., 812.
 manufacture of (HELFS), (P.), B., 572; (TRAVERS, CLARK, and REGENERATIVE COAL GASIFICATION SYSTEM), (P.), B., 623*;
 (KAEMMERLING, BENNER, and FULLER-LEHIGH Co.), (P.), B., 624*;
 (WOODALL-DUCKHAM, LTD., SMITH, and FINLAYSON), (P.), B., 699;
 (ANG. ÉTABL. BARBIER, BÉNARD, and TURENNE), (P.), B., 813;
 (HEBEL), (P.), B., 861.
 apparatus for (BROOME and GEN. REDUCTION GAS & BY-PRODUCTS Co.), (P.), B., 813;
 (ODELL), (P.), B., 940.
 continuous production of (KOPPERS), (P.), B., 861.
 apparatus for extraction of, from bituminous materials (HARTMAN and HARTMAN INTERESTS, INC.), (P.), B., 907.
 production of, of low moisture content, from moist fuel (JAHNS), (P.), B., 573.
 production of, from sewage (SIERP), B., 78.
 manufacture and carbonisation of fuel, apparatus for (PARKER), (P.), B., 861.
 production of mixtures of air and (SALAU and BADER & SALAU), (P.), B., 42*.
 purification of (COOK), B., 35;
 (COBB and HODSMAN), (P.), B., 232*;
 (FULWEILER and U.S.I. CONTRACTING Co.), (P.), B., 699;
 (SPERR and KOPPERS Co.), (P.), B., 701*;
 (HUMPHREYS & GLASGOW, LTD., and FULWEILER), (P.), B., 908*;
 (BLAKELEY; BURKHEISER), B., 938.
 by wet process (BERTHELOT), B., 36.
 apparatus for (GRAFTON, WEESNER, and HOFFMAN), (P.), B., 262.
 material for (SIRIUS WERKE and BRUNNER), (P.), B., 262.
 wet purification of, and efficiency of condensation plant (BLAKE), B., 226.
 generation and distribution of (HUMPHREYS & GLASGOW and PERRY), (P.), B., 624*.
 utility of secondary air in combustion of (REMBERT and HASLAM), B., 83.
 relation between calorific value of, and the oxygen to burn it, or its products of combustion (FAHRENHEIM), B., 938.

- Gas, refrigeration of, to remove naphthalene, water, and ammonia (LENZE and RETTENMAIER), B., 938.
desulphurisation of (THAU), B., 258.
- Gas, blast-furnace, electrical purification of (METALLBANK & METALLURISCHE GES.), (P.), B., 147.
cleaning of (HÄRING and FREYN ENGINEERING Co.), (P.), B., 655*.
- coal, purification of (MILES, ALLOTT, and NEWTON CHAMBERS & Co.), (P.), B., 621.
from sulphur compounds (REESON and MOSS), (P.), B., 430.
liquid purification of (HARNIST), B., 522.
washing or scrubbing of (BLAKE), (P.), B., 654.
condensation of (PRATER), B., 348.
carburetted of (MCLAREN), (P.), B., 6*.
recovery of ammonia from (JACKMAN), B., 809.
poisoning by. See under Poisoning.
determination of naphthalene in (WALTERS), B., 731.
from coal or other fuels, purification of (SANDER), (P.), B., 183.
coal and water, manufacture of a mixture of (BREISIG), (P.), B., 778.
coke-oven, behaviour of, at low temperatures (NAYLOR), B., 427.
purification of (SOC. ANON. ÉTABL. EGROT & GRANGÉ), (P.), B., 262.
absorption of ammonia from (FOKIN), B., 581.
synthesis of ammonia from (CLAUDE), B., 404.
extraction of hydrogen from (AMMONIA), (P.), B., 440.
- combustible, production of, from finely-divided or high-ash fuels (STETTNER CHAMOTTE-FABR. DIDIER), (P.), B., 309.
simultaneous production of cement and (GEWERKSCHAFT LUTZ III.), (P.), B., 193.
production of coke and, from bituminous fuel (POWER GAS CORP. and RAMBUSH), (P.), B., 428.
- electrolytic, combustion of, in the electric discharge (FINCH and COWEN), A., 690.
- fuel, production of (ROSE and HARRIS), (P.), B., 351.
prevention of corrosion in manufacture of (COOPER, HENSHAW, and HOLMES & Co.), (P.), B., 428.
elimination of hydrogen sulphide, etc., from (KOPPERS Co.), (P.), B., 39.
removal of naphthalene from (SPERR and KOPPERS Co.), (P.), B., 430; (KOPPERS Co.), (P.), B., 624*.
- generator, manufacture of (KYBER and BRITZKE; KYBER), (P.), B., 664.
- illuminating, manufacture of (STILES), (P.), B., 5.
determination of hydrogen and methane in (STEUER), B., 3.
mixed, manufacture of (ASBECK), (P.), B., 477.
from carbonisation of various fuels, etc. (LEBEAU), B., 521.
- natural, thermal decomposition of (SZARVASY), (P.), B., 908.
recovery of gasoline from (MOSSOR and SOUTH PENN OIL Co.), (P.), B., 120.
sampling and examination of (BURRELL, SEIBERT, and JONES), B., 347.
- oil, production of (RUDE), (P.), B., 39; (SOC. CHEM. IND. IN BASLE), (P.), B., 309; (GASIFIER Co.), (P.), B., 527*.
apparatus for (BLANCHET and SOC. CHIMIE ET CATALYSE IND.), (P.), B., 119.
generators for (ZWICKY), (P.), B., 575*; (GIBSON), (P.), B., 862.
- producer, continuous production of (A.-G. F. INDUSTRIWERTE and FRÜH), (P.), B., 309.
- rich, production of, by aid of water-gas (MISCH), (P.), B., 573.
- semi-water, production of (MALBAY), (P.), B., 5.
- town, relative rates of combustion of constituents of, burning in secondary air (REMBERT and HASLAM), B., 83.
- water, manufacture of (RUDE), (P.), B., 84; (SMITH), (P.), B., 182; (HUMPHREYS & GLASGOW and EVANS), (P.), B., 229; (STEERE), (P.), B., 351; (PATART), (P.), B., 396; (FRANKL; HUMPHREYS & GLASGOW and CHRISMAN), (P.), B., 429; (HUMPHREYS & GLASGOW and STELFOX), (P.), B., 477; (LEONARZ), (P.), B., 732; (STEERE and EBERLEIN), (P.), B., 778.
with vertical retorts (N.V. SILICA OVENBOUW MIJ. and OTTO & Co.), (P.), B., 699.
apparatus for (STILES), (P.), B., 5; (HUMPHREYS & GLASGOW and CHRISMAN), (P.), B., 262; (R. R. and J. S. McDONNELL), (P.), B., 813.
use of oxygen in (VANDAVEER and PARR), B., 811*.
- continuous production of (HILLEBRAND; A.-G. F. INDUSTRIWERTE and FRÜH), (P.), B., 309.
- Gas, water, from liquid hydrocarbons (BRUTZKUS), (P.), B., 524.
resistance to flow of gases in fuel-bed of generators for production of (TRAVERS), B., 305.
utilisation of waste heat in production of (BAMAG-MEGUIN), (P.), B., 940.
utilisation of waste gases from generators of (MARISCHKA), (P.), B., 84.
flame spectrum of (WESTON), A., 8.
increasing the calorific value of (STRACHE), B., 859.
hydrogen from (CICALI), B., 582; (EVANS and NEWTON), B., 698.
carburetted, manufacture of (SMITH and WEISSER), (P.), B., 573.
- Gases, Einstein's theory of (SCHRÖDINGER), A., 463.
apparatus for production of (HERBST), A., 1021.
absorption spectra of, in the Schumann region (LEIFSON), A., 991.
excitation of spectra of, in chemical reactions (FRÄNZ and KALLMANN), A., 109.
magnetic properties of (GLASER), A., 230.
magnetic susceptibility of (LEHRER), A., 1086; (HAMMAR), A., 1197.
effect of magnetic fields on refractive index of (FRASER), A., 567.
electric discharge in (FOSTER), A., 219; (DAUVILLIER), A., 330.
radiation from (THOMSON), A., 988.
ionisation of, by electron impacts (COMPTON and VAN VOORHIS), A., 769.
natural ionisation in (BROXON), A., 656.
photo-ionisation of, by thermionic discharge (MOHLER), A., 877.
variation of residual ionisation of, with pressure (MERRYMON), A., 772.
ionisation of, effects of knock inducers and suppressors on (CLARK, BRUGMANN, and THEE), B., 83.
motion of electrons in (TOWNSEND), A., 3.
application of quantum theory to behaviour of electrons in (ZWICKY), A., 878.
mobility of ions in (LAPORTE), A., 553, 877.
size distribution of ions in (BUSSE), A., 1074.
orientation of molecules of (KRISHNAN), A., 1086.
molecular changes in (ANTONOV), A., 786.
effect of pressure on dielectric constants of (WOLF), A., 1081.
thermal conductivity of (GREGORY and ARCHER), A., 231; (BUSCH), A., 669.
variation of, with pressure (GREGORY and ARCHER), A., 340.
specific heat of (WALKER), A., 15.
thermochemistry of reactions of (BODENSTEIN, GÜNTHER, and HOFFMEISTER), A., 910.
isothermals of, and their binary mixtures (VAN AOT and ONNES), A., 234.
equation of transfer in kinetic theory of (HAAG), A., 1205.
rotation entropy of (SZÉLL), A., 570.
relation between energy and temperature of (WERTHEIMER), A., 1088.
compressibility of (PICKERING), A., 464.
electrostriction in (KLEFOTI), A., 1196.
densities of (BLANCHARD and PICKERING), A., 999.
determination of density of, with the density balance (STOCK and RITTER), A., 669.
relation between temperature, density, and pressure of (PICKERING), A., 569.
curves of ideal expansion of (SCHAMES), A., 1198.
effect of the presence of an indifferent gas on the concentration and activity of, in equilibria with a condensed phase (McHAFFIE), A., 385.
mechanism of reactions with (KRÖGER), A., 41.
velocity of reactions between (TAYLOR), A., 124.
uni- and bi-molecular reactions of (HINSHELWOOD and HUTCHINSON), A., 804.
cooling, liquefaction, and separation of (SELIGMANN), (P.), B., 303.
liquefaction of (RECORDON, HILLE, and AIR REDUCTION Co.), (P.), B., 81; (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 392.
liquefaction and rectification of mixtures of (CICALI), (P.), B., 406.
supersaturated solutions of, in liquids (CLARE), A., 18.
bubbles in supersaturated solutions of (FARNCOMB), A., 18.
effusion of (WEIDE and BICHOWSKY), A., 1199.

Gases, adsorption of, history of (LARMOR), A., 1118.
 by alumina gels (PERRY), A., 19.
 by charcoal (SMITH), A., 1001.
 by activated charcoal (ROWE), A., 345, 673.
 by wood charcoal (MAGNUS and CANN; MAGNUS), A., 1001;
 (HENGLEIN and GRZENKOVSKI), B., 143.
 by colloidal solutions (GATTERER), A., 347.
 from moist gaseous mixtures (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 776.
 by glass walls (CRESPY and MOLES), A., 1002.
 on glass and silver powder (DURAU), A., 898.
 by liquid drops (WHITMAN, LONG, and WANG), B., 423.
 by platinum black (BENTON), A., 1001.
 apparatus for absorption of, by solids (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 696*.
 heat of adsorption of, on solids (ILJIN), A., 1104.
 by coal and charcoal (WHITEHOUSE), B., 145.
 washing of (WEISSENBERGER, HENKE, and SPERLING), B., 111;
 (WEISSENBERGER), B., 652.
 with mixed absorbents (WEISSENBERGER, SCHUSTER, and ZACK), B., 1.
 aëration and purification of (KOPFERS Co.), (P.), B., 813.
 purification of (COULIER), (P.), B., 573.
 from iron carbonyl (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 351.
 from sulphur compounds (REESON and MOSS), (P.), B., 430.
 purification, filtration, and deodorisation of (BRANCO), (P.), B., 304, 776*.
 apparatus for purifying, cooling, heating, mixing, or absorbing (THEISEN), (P.), B., 255.
 purifying materials for (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 85.
 electrical purification of (SIEMENS-SCHUCKERTWERKE), (P.), B., 284, 413; (EDLER; HOPKINSON), (P.), B., 371; (WINTERMUTE and RESEARCH CORP.; ROHMANN and ELEKTR. GASREINIGUNGS-GES.; SIEMENS-SCHUCKERTWERKE and HEINRICH), (P.), B., 498.
 electrodes for (SIEMENS-SCHUCKERTWERKE), (P.), B., 412.
 plant for (SIEMENS-SCHUCKERTWERKE), (P.), B., 446.
 cleaning of insulators in apparatus for (METALLBANK & METALLURGISCHES GES.), (P.), B., 551.
 electrical precipitation of suspended material from (HORNE and INTERNAT. PRECIPITATION Co.; ANDERSON and INTERNAT. PRECIPITATION Co.), (P.), B., 176; (VIETS and INTERNAT. PRECIPITATION Co.; WEISKOFF and INTERNAT. PRECIPITATION Co.; SIEMENS-SCHUCKERTWERKE and HEINRICH; ELEKTR. GASREINIGUNGS-GES. and ROHMANN), (P.), B., 177; (SIEMENS-SCHUCKERTWERKE, SCHENKEL, MAYER, and HAHN), (P.), B., 886.
 removal of dust from (SALERNI), (P.), B., 304.
 centrifugal apparatus for (KEITH & BLACKMAN Co. and KEITH), (P.), B., 904.
 removal of suspended matter from (BAILEY and METROPOLITAN-VICKERS ELECTRICAL Co.), (P.), B., 648.
 recovery of vapours from (SCHEUBLE), (P.), B., 178.
 separation of vaporised organic substances from (N.V. ALGEM. CHEM. PRODUKTENHANDEL), (P.), B., 223.
 separation of vapours of condensable hydrocarbons from (SWAN), (P.), B., 182.
 separation of liquids from (HELE-SHAW and BEACHAM), (P.), B., 3*.
 apparatus for separation of moisture from (GEN. ENGINEERING Co. (RADCLIFFE) and TAYLOR), (P.), B., 113.
 separation of suspended particles from (BURDICK), (P.), B., 3*.
 separation of solid particles from (CHANCE & HUNT, LTD. and CALDER), (P.), B., 648.
 separation of solid and liquid constituents from (SZAMATOLSKI and BLOHM), (P.), B., 648.
 containing hydrogen sulphide, recovery of sulphur from (FISCHER and DILTHEY), B., 938.
 devices for chemical treatment of (METROPOLITAN-VICKERS ELECTRICAL Co. and HILL), (P.), B., 446.
 treatment of, at high temperatures (FOURMENT), (P.), B., 145.
 with active charcoal (N.V. ALGEM. NORIT MAATSCHAPPIJ), (P.), B., 223.
 treatment of liquids with (CHEM. FABR. NIEDERRHEIN GES. and ULLMANN), (P.), B., 2; (GREENAWALT), (P.), B., 473, 567.
 effecting intimate contact between liquids and (BRITISH OXYGEN Co. and HOUSEMAN), (P.), B., 616.

Gases, mixing apparatus for liquids and (FARBW. VORM. BAYER & Co.), (P.), B., 696*;
 (KIRKHAM, HULETT, & CHANDLER, LTD., HERSEY and STOKES), (P.), B., 728.
 forces at interfaces between liquids and (FRUMKIN, DONDE, and KULVARSKAYA), A., 1092.
 measurement of flow of (MATTNER), B., 775.
 rate of flow of, through porous material (SAMESHIMA), A., 895.
 gauze for measurement of (FIGOUR), A., 1223.
 measurement of, dissolved in liquids (DAYNES and CAMBRIDGE INSTRUMENT Co.), (P.), B., 968.
 device for indicating presence of (RUBEN), (P.), B., 39.
 apparatus for storage of (MANLEY), A., 378.
 porous masses for storage of (AUTOGEN GASACCUMULATOR), (P.), B., 521*.
 combustion of, in the electric discharge (FINCH and COWEN), A., 690.
 at high pressures (BONE, NEWITT, and TOWNEND), A., 480.
 at medium pressures (FENNING), B., 258.
 flameless catalytic combustion of (SCHIMMEL), (P.), B., 396.
 ignition of, by sudden compression (TIZARD and PYE), A., 690.
 explosive mixtures of (JORISSEN and ONGKIEHONG), B., 179.
 explosions of (GARNER and SAUNDERS), A., 654, 1205; (GARNER; PAYMAN and WHEELER; DIXON, HARWOOD, and HIGGINS), A., 689; (LIND), A., 696.
 radiation in (DAVID), A., 693.
 reactions between, in electric furnaces (BROWN and ROESSLER & HASSLACHER Co.), (P.), B., 98.
 apparatus for effecting catalytic reactions in, under pressure (PATART), (P.), B., 346.
 degeneration of (SCHIDLOF), A., 463.
 laboratory pump for circulation of (FRANCIS), B., 111.
 determination of, in atmospheres (ATKINSON), (P.), B., 429.
 determination of dust in (ALLNER), B., 111.
 determination of water in (HACKSPILL and D'HUART), A., 374.
 separation of, by liquefaction and rectification (JORDAN, and Soc. L'Air Liquide), (P.), B., 256*.
 separation of constituents of ternary mixtures of (AIR REDUCTION Co. and VAN NUYS), A., 1000.
 See also Vapours.
 Gases, burner, presence of arsenic in, and its bearing on "Haff disease" (GLASER), B., 358.
 removal of arsenic from (METALLBANK & METALLURGISCHES GES. and KURZ), (P.), B., 320.
 determination of sulphur trioxide in (GILLE), B., 437; (SCHMIDT), B., 581.
 coloured, determination of, by means of the photo-electric cell (H. and A. COPAUX), B., 125.
 combustible, production of (HUMPHREY and SYNTHETIC AMMONIA & NITRATES), (P.), B., 38.
 combustion, centrifugal apparatus for separation of solid impurities from (STOTT), (P.), B., 904.
 detection of carbon monoxide in (WEIN), B., 225.
 compressed, production of, by electrolysis (HAUSMEISTER), (P.), B., 499*.
 industrial development of (CARTER), B., 807.
 condensed, mass action equation for (GILESPIE), A., 244.
 corrosive, apparatus for treating (MEDIGOVICH), A., 1000.
 diamagnetic, effect of pressure on susceptibility of (LEHRER), A., 784.
 diatomic, band lines in the infra-red spectra of (KEMBLE and BOURGIN), A., 658.
 dipole, dielectric constants of (KRONIG; MANNEBACK), A., 993.
 isothermals of, and their binary mixtures (VAN AGT), A., 233.
 dilute, phenomena in (SEXL), A., 894.
 dipolar, quantum mechanics of dielectric constants of (MENSING and PAULI), A., 886.
 distillation, production of low-boiling hydrocarbons from (GELSENKIRCHENER BERGWERKS-A.-G., ABTEIL. SCHALKE, and CASPARI), (P.), B., 574.
 separation of condensable products from, by electrical precipitation (SIEMENS-SCHUCKERTWERKE), (P.), B., 262.
 dry liquefied, production of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 904*.
 dust-laden, filtration of (THOMSON and NISBET), (P.), B., 82, 178*.
 electrically-excited, anomalous dispersion of (LADENBURG, KOPFERMANN, and CARST), A., 994.
 exhaust, from gasoline engines, equilibrium in (LOVELL and BOYD), B., 83.

- Gases, explosive, storage of (NORDDEUTS. ACETYLEN & SAUERSTOFFWERKE and POMMÉE, (P.), B., 40.
filling mass for containers for (NESS and PREST-O-LITE, (P.), B., 779.
flowing, electrostatic separation of suspended particles from (LURGI APPARATEBAU-GES.), (P.), B., 224.
flue, examination of (ADOS GES. and HENSEN, (P.), B., 309.
apparatus for testing of (SOKOLOV-WICHNEVSKY, (P.), B., 524.
determination of unburnt carbon from analysis of (CHAPMAN, B., 347.
determination of carbon dioxide in (SCHMIDT, HUTTON, and CUTLER-HAMMER MANUF. CO.), (P.), B., 262.
furnace mixed, sulphur content of (WILL and HULSBRUCH, B., 859; (HULSBRUCH, B., 971*.
ideal, laws for (MAASS and MENNIE, A., 233.
entropy of (VERSCHAFFELT, A., 463.
entropy and heat of vaporisation of (DE KOLOSOVSKI, A., 1198.
energy gradations for (SCHRÖDINGER, A., 555.
quantisation of (FERMI, A., 555, 657.
imperfect mixed, theory of (FOWLER, A., 16.
industrial, removal of carbon dioxide from, by washing (FISCHER and DILTHER, B., 906.
inert, emission spectra of (VEGARD, A., 213.
catalysis by (LIND and BARDWELL, A., 581, 770, 990.
inflammable, explosion limits of (JORISSEN, A., 1100.
ionised, chemical effects in (LIND and BARDWELL, A., 654.
scattering of electrons in (LANGMUIR, A., 3; (PENNING; DYMOND, A., 989.
kinetic theory of (PERSICO, A., 354.
Japanese natural (YAMAGUCHI and KANO), A., 1118.
low-temperature carbonisation, removal of dust from (DEUTSCHE LUFTFILTER-BAUGES.), (P.), B., 573.
metallurgical, purification of (BRASSERT and ANDREWS, (P.), B., 18.
mine, sampling and examination of (BURRELL, SEIBERT, and JONES, B., 347.
mixed, spectra of striated discharge in (KEYS and HOME), A., 765.
viscosity of (TRAUTZ and NARATH, A., 671.
combustion of (TERADA and YUMOTO, A., 1106.
explosion pressures of, at high densities (DAVID, A., 341.
velocity of sound in (DIXON and GREENWOOD, A., 16.
extraction of vapours from (OBERFELL, BURRELL, and GASOLINE RECOVERY CORP.; BURRELL, OBERFELL, VORESS, and GASOLINE RECOVERY CORP.), (P.), B., 864.
toxicity of (HOFER, A., 431.
examination (ADOS GES. and HENSEN, (P.), B., 309.
liquefaction and separation of (MEWES, (P.), B., 936, 968.
separation of (PATART, (P.), B., 303; (MILLER and SILICA GEL CORP.), (P.), B., 473*; (VAN NUYS and WILKINSON, (P.), B., 567; (R. F. and R. K. E. MEWES, (P.), B., 823.
magnetic separation of (HAYNES and LINDE AIR PRODUCTS CO.), (P.), B., 472.
binary, equilibria of adsorption of (PALMER, A., 239.
combustible, containing nitrogen (PALACIN, (P.), B., 309.
effect of infra-red radiation on combustion of (DAVID, RICHARDSON, and DAVIES, A., 585.
monatomic, chemical constants of (SIMON, A., 1103.
chemical inertia of, from the electron theory (DAMIANOVITCH, A., 657.
experimental degradation of (MEISSNER, A., 570.
natural, of Japan, constituents of (KANO and YAMAGUTI, A., 933.
from Madagascar and Réunion (MOUREU, LEPAPE, MOUREU, and GESLIN, A., 380.
rare, spectra of (HICKS, A., 1186.
reacting, ionisation in (BREWER, A., 1074.
smelting furnace, recovery of sulphur dioxide from (EUSTIS, (P.), B., 359.
smoke, deleterious action of, on vegetation (NOAK, B., 458.
unsaturated, manufacture of (JAKOWSKY, (P.), B., 924.
waste, determination of combustible constituents in (MOELLER and SIEMENS & HALSKE, (P.), B., 39.
Gas absorption apparatus (CHEM. WERKE LOTHRINGEN, (P.), B., 79; (HOWARD and GRASELLI CHEMICAL CO.), (P.), B., 114.
with charcoal (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING, (P.), B., 425.
with solid absorbents (VORESS, CANTER, SKODG, and GASOLINE RECOVERY CORP.), (P.), B., 425.
Gas absorption apparatus, tower (NEWTON, (P.), B., 176.
Gas analysis (LEBEAU, B., 36; (CAIN, (P.), B., 39.
of gases from rocks (METTA, A., 813.
sodium chloride solution as confining liquid in (HOFFMANN, B., 146; (TROPSCH, B., 427.
Gas analysis apparatus (CAPPELLEN and NOYONS, A., 1067; (OTT, B., 474; (YOUNG and RUGGLES, (P.), B., 574; (STIEHR, B., 967.
for determining small amounts of vapour (McHAFFIE, A., 700.
U.S. Bureau of Mines Orsat (FIELDNER, JONES, and HOLBROOK, B., 306.
Gas appliances, examination of products of combustion from (INSTITUTION OF GAS ENGINEERS, B., 1002.
Gas black for rubber manufacture, effects and detection of grit in (GALLIE, B., 204.
Gas burners (HELPS, (P.), B., 941.
atmospheric, orifices of (KURAKAWA, B., 730.
Gas calorimeters (GRISWOLD and DOHERTY RESEARCH CO.), (P.), B., 351.
recording (PARR, B., 1002.
Thomas (RAGATZ and KOWALKE, B., 970.
Gas circulation apparatus (CHATTERJI and FINCH, A., 41.
automatic siphonic (GREEN, A., 593.
glass pump (PORTER, BARDWELL, and LIND, A., 1223.
Gas cylinders, periodic heat treatment of (GAS CYLINDERS RESEARCH COMMITTEE, B., 727.
Gas engines. See under Engines.
Gas flames, combustion in (REMBERT and HASLAM, B., 82.
length of, burning in secondary air (REMBERT and HASLAM, B., 83.
effect of various factors on, in combustion flues (STOLLER, B., 521.
Gas generators (BREISIG, (P.), B., 778; (UMPLEBY, (P.), B., 907.
simple (CAMPARDOU, A., 492.
for acetylene or oxygen (CHOFFEL and JACQUELIN, (P.), B., 941.
Gas liquors, purification of (KEITH and GEN. METALS RECOVERY CO.), (P.), B., 430.
treatment of (HEFFNER, TIDY, and RAINEY-WOOD PROCESS CORP.), (P.), B., 862.
apparatus for (HEFFNER, TIDY, and RAINEY-WOOD PROCESS CORP.), (P.), B., 862.
recovery of phenols from (HEFFNER, (P.), B., 147; (HEFFNER and TIDY, (P.), B., 624*, 1006*.
sulphide, regeneration of (KOPPERS CO.), (P.), B., 5.
Gas mantles, incandescence (TERRELL, (P.), B., 184*.
Gas masks, physics and chemistry of (ENGELHARD, B., 110.
Gas meters, corrosion in (FIRTH, B., 474.
Gas plants, safety device for (SELAS A.-G.), (P.), B., 42*.
Gas producers (WAITE and DAVEY, (P.), B., 39; (MOSS and GEN. ELECTRIC CO.), (P.), B., 230; (ROGERS and WELLMAN-SEEVER-MORGAN CO.), (P.), B., 232*, 351; (LUMNIS, ISLEY, and MORGAN CONSTRUCTION CO.), (P.), B., 264*; (BENN-HOLD and PINTSCH A.-G.), (P.), B., 479*; (SUFFERN, (P.), B., 621; (HUMPHREYS & GLASGOW and GLASGOW, (P.), B., 624*; (WHITE, SMITH, and CLAYTON, (P.), B., 654; (STEERE, (P.), B., 972.
heating the blast for (BADISCHE ANILIN- & SODA-FABRIK, (P.), B., 857.
chemical reactions in (GOFF, B., 617.
pre-drying and pre-distillation of fuels in (LANDSBERG, (P.), B., 309.
utilisation of ferruginous limestone in (SCHNEIDER, (P.), B., 351.
utilisation of liquid slag from (POLYSIUS EISENIESSERER & MASCHINENFABR.), (P.), B., 430.
for the distillation of fine-grained or dusty fuel (SIEGENER MASCHINENBAU and MENZEL, (P.), B., 654.
combined with furnaces for steam generators (WOLLASTON, (P.), B., 84.
pressure (KOLLER, (P.), B., 778.
semi-water, air-blast device for (SOC. ANON. D'EXPLOIT. DES BREVETS "COUSIN" DITE "LE CHAUFFAGE IND."), (P.), B., 778.
Gas protection apparatus, filling for (KERSCHBAUM, (P.), B., 902.
Gas purification apparatus (KOPPERS CO.), (P.), B., 813; (CORNELIER, (P.), B., 1004.
grids for (SPENCER, (P.), B., 85*.
electrical, leading in means for high-tension currents in (LODGE-COTTRELL, LTD. and METALLBANK & METALLURGISCHE GES.), (P.), B., 712.

Gas-purifying materials, spent, determination of free sulphur in (STAVORINUS), B., 906.

Gas reactions, velocity of (CHRISTIANSEN), A., 1213.

termolecular (HINSHELWOOD and GREEN), A., 579.

Gas retorts. See under Retorts.

Gas scrubbers (BLAKELEY), (P.), B., 230; (SMITH SEPARATOR Co. and WATERS), (P.), B., 430.

rotary (GAS LIGHT & COKE Co. and EVE), (P.), B., 39.

Gas volume-meter for density of solids (KARNS), A., 707.

Gas washing apparatus (MILLIGAN), A., 707; (KIRKHAM, HULETT & CHANDLER and HERSEY), (P.), B., 351; (AURIG and BRUCKLMAYER), (P.), B., 862.

centrifugal (KUEHN and BARTLETT-HAYWARD Co.), (P.), B., 39.

Gas works, crushing of spent oxide from (ELENBAAS), (P.), B., 111.

Gasification plant, operation of combined carbonisation and (ILLIO), (P.), B., 229.

Gasoline, manufacture of (TINKER), (P.), B., 232*; (HOLMES, MANLEY, BEHMER, and TEXAS Co.), (P.), B., 623; (WEIR and STANDARD DEVELOPMENT Co.), (P.), B., 863; (ROGERS, PAULUS and STANDARD OIL Co.), (P.), B., 1004.

recovery of (BERNARD and SINCLAIR OIL & GAS Co.), (P.), B., 41; (HOSMER), (P.), B., 574.

from natural gas (MOSSOR and SOUTH PENN OIL Co.), (P.), B., 120.

from gaseous mixtures (CARBIDE & CARBON CHEMICALS CORP.), (P.), B., 184*.

apparatus for (BERNARD and SINCLAIR OIL & GAS Co.), (P.), B., 700.

gum formation and discoloration of (BROOKS), B., 1004.

natural gas, purification of (OBERFELL, BALLARD, ALDEN, UTSINGER, LENTZ, and CHESTNUT & SMITH CORP.), (P.), B., 352.

production of commercial gasoline from (MACKENZIE, STEENBERGH, and BATAAFSCHE PETROLEUM MAATSCH.), (P.), B., 184.

See also Petrol.

Gasoline engines. See under Engines.

Gastric juice, hydrogen-ion concentration of (KAHN and STOKES), A., 1068.

hydrochloric acid in, from chlorides, of blood (MOSONYI), A., 538.

hydrochloric acid and chlorine in, and effect of work on its secretion (DELHOUGNE), A., 1168.

effect of carnosine in meat extract on secretion of (KRIMBERG and KOMAROV), A., 752.

detection of lactic acid in (CAPELLI), A., 632.

determination of acidity of (BÜTTNER), A., 212; (KALK and KUGELMANN), A., 764.

Geissler tubes, luminescence spectra of (BJELOPOLSKI), A., 109.

Gels, structure of (THOMAS and SIBI), A., 353, 903; (ARSEM), A., 473.

production of, for catalytic and absorbent purposes (PATRICK), (P.), B., 346*.

with anomalous double refraction (MÖHRING), A., 1098.

microscopy of freezing of (HARDY), A., 903.

swelling of (LIEPATOV), A., 577.

swelling and shrinkage of (SCHULTZE), A., 473.

fibrous growths formed during precipitation in (MORÁVEK), A., 20.

Gelatin (SCHRYVER), B., 557.

manufacture of (TOD), (P.), B., 138, 456; (BIERLING), (P.), B., 600.

suitable for photographic emulsions (JENNY, ANGERSTEIN, and AMER. ELECTRO-OSMOSIS CORP.), (P.), B., 388*.

manufacture of tablets of (COMP. NAT. MAT. COL. ET MANUF. PROD. CHIM. NORD REUNIES, ÉTAB. KUHLMANN), (P.), B., 990.

production of, from fish (KERNOT and SPEER), B., 557.

production of granules of (AKT.-GES. F. CHEM. PRODUKTE), (P.), B., 990.

electro-osmotic purification of (RUPPEL, WOLF, and AMER. ELECTRO-OSMOSIS CORP.), (P.), B., 456.

molecular weight and gel state of (EGGERT and REITSTÖTTER), A., 1098.

membrane potentials of, against salt solutions (NORTHROP and KUNITZ), A., 352.

viscosity and elasticity of solutions of (FREUNDLICH and NEUKIRCHER), A., 351.

Gelatin, swelling and osmotic pressure of, in salt solutions (NORTHROP and KUNITZ), A., 793.

swelling pressure of (NORTHROP and KUNITZ), A., 1098.

solutions, surface tension of (JOHNSTON and PEARD), A., 1093.

effect of colloidal ferric oxide on solutions of (WINTGEN and MEYER), A., 1204.

drying of (LUSCHER and U.S. GLUE Co.), (P.), B., 415.

emulsions in the system, cresol, water, and (WOODMAN), A., 676.

gels, structure of (KRAEMER), A., 124.

freezing of (MORAN), A., 904.

diffusion of dyes into (MOMMSEN), A., 354.

coagulation of, in textiles (BRYLINSKI; BRANDT), B., 123.

reduction of (ABDERHALDEN and SCHWAB), A., 83.

fumaric acid from hydrolysis of (ABDERHALDEN and HAAS), A., 312.

influence of, on precipitation of silver chromate (BOLAM and MACKENZIE), A., 678.

photographic sensitizers of (A. & L. LUMIÈRE and SEYEWETZ), (P.), B., 466.

acid, reversibility of, on dialysis (FODOR and EPSTEIN), A., 1098.

strongly stretched, preparation and cleavage of, and its X-ray diagram (GERNGROSS and KATZ), A., 793.

physical method for examination of (BAKER and DAVIDSON), B., 388.

Gelatin foods (THIELE and C. H. BOEHRINGER SOHN), (P.), B., 719.

Gelatoze, complex metallic derivatives of, preparation of (CHEM. FABR. VORM. SCHERING), (P.), B., 771.

Gems, artificial (BERTOLINI and SWISS JEWEL Co.), (P.), B., 126.

preparation of (GEN. ELECTRIC Co. and PATENT TREUHAND GES. F. ELEKTR. GLÜHLAMPEN), (P.), B., 89.

"Genalkaloids" (POLONOVSKI and POLONOVSKI), A., 81.

Genista tinctoria (broom), oil from (TREFF, RITTER, and WITTRISCH), B., 850.

Gentiana lutea, constituents of roots of (BINAGHI and FALQUI), B., 106.

Gentiobiose (PRINGSHEIM, BONDE, and LEIBOWITZ), A., 1127.

synthesis of (PICTET and GEORG), A., 152; (HELFERICH, BAUERLEIN, and WIEGAND), A., 386; (GEORG and PICTET), A., 602.

from hydrolysis of maize starch (BERLIN), B., 992.

identity of isomaltose with (BERLIN), A., 602.

Gentiobiosyl fluoride, and its hepta-acetate (HELFERICH, BAUERLEIN, and WIEGAND), A., 386.

Geochemistry of the elements (GOLDSCHMIDT, ULRICH, and BARTH), A., 228.

Geological time, estimates of, with reference to thorium and uranium minerals (HOLMES), A., 654.

Geraniol, determination of (RADCLIFFE and CHADDERTON), B., 849.

γ -cycloGeraniolones (ESCURROU), A., 1238.

"Germanin" (Baeyer 205), therapeutic action of (MANDEL and STEUDEL), A., 1273.

Germanite, germanium and gallium from (KEIL), A., 589.

Germanium (DENNIS, ORNDORFF, and TABERN), A., 924; (DENNIS and HANCE), A., 1028.

atomic weight of (BAXTER and COOPER), A., 5.

from germanite (KEIL), A., 589.

in zinc blende (SCUTT), A., 709.

as a contact rectifier (MERRITT), A., 115.

Germanium compounds, pharmacology of (KEESER), A., 864.

volatile, vacuum apparatus for study of (LAUBENGAYER and COREY), A., 931.

Germanium tetrachloride (LAUBENGAYER and TABERN), A., 1088.

crystal structure of (JAEGER, TERPSTRA, and WESTENBRINK), A., 339.

and its ammonia compounds (PUGH and THOMAS), A., 695.

dioxide, physico-chemical properties of (ROTH and SCHWARTZ), A., 350.

Germanium organic compounds :—

Germanium tetramethyl (DENNIS and HANCE), A., 1028.

Germanium detection and separation :—

detection of, microchemically (CHAMOT and COLE), A., 1019.

separation of (WADA and KATO), A., 377.

Germanochloroform (DENNIS, ORNDORFF, and TABERN), A., 924.

Germicides (HAROLD and UNITED WATER SOFTENERS), (P.), B., 518*.

manufacture of (HAROLD), (P.), B., 302; (HAROLD and UNITED WATER SOFTENERS), (P.), B., 726.

- Gilpinite, identity of johannite with (LARSEN and BERMAN), A., 710.
- Gilsonite, products from (FORREST, HAYDEN, DOUTHETT, and BARBER ASPHALT Co.), (P.), B., 478; (FORREST, HAYDEN, and DOUTHETT), (P.), B., 575*.
- Ginger, pungent principles of (NOMURA and TSURUMI), A., 1145.
- Gitalin, diacetyl derivative (CLOETTA), A., 755.
- Githagenin, and its derivatives (WEDEKIND and KRECKE), A., 982.
- Githagin (WEDEKIND and KRECKE), A., 982.
- Githaginic acid, and its dioxime (WEDEKIND and KRECKE), A., 982.
- Gitogenin, structure of (WINDAUS), A., 1146.
- Gitoxigenin, hydrolysis of (JACOBS, HOFFMANN, and GUSTUS), A., 1250.
- Glands, physiology of (ASHER and CALVO-CRIADO), A., 198; (ASHER and UCHIDA), A., 206.
- nitrogen equilibrium during secretion in innervation of (ALPERN and LINDENBAUM), A., 1168.
- effect of feeding of, to white rats (McKINLEY and FISHER), A., 643.
- Harder's, determination of hæmatoporphyrin in (FABRE and SIMONNET), A., 750.
- See also Mammary and Salivary glands, Thymus and Thyroid.
- Glaserite, manufacture of (STEIN), (P.), B., 788.
- Glass (TAYLOR and CORNING GLASS WORKS), (P.), B., 241*.
- manufacture of (COMPTON and WESTINGHOUSE LAMP Co.), (P.), B., 192*; (SHIVELY and DRACKENFELD & Co.), (P.), B., 407; (GEN. ELECTRIC Co. and PATENT TREUHAND GES. F. ELEKTR. GLÜHLAMPEN), (P.), B., 746; (SIBOR S.A. VERRERIES DE ROMONT), (P.), B., 747; (PARSONS and METALS RESEARCH CORP.), (P.), B., 879.
- removal of iron skin from waste products of (GESNEL), (P.), B., 542.
- utilisation of refuse for (GROTE), (P.), B., 158.
- treatment of (KRAUS), (P.), B., 824.
- annealing of (HENRY and ILLINOIS-PACIFIC GLASS Co.), (P.), B., 585; (ILLINOIS-PACIFIC GLASS Co.), (P.), B., 709*; (MISSISSIPPI GLASS Co.), (P.), B., 790.
- law of (PRESTON), B., 89.
- lehrs for (FRAZIER), (P.), B., 408*.
- annealing and re-annealing of (HAMPTON), B., 539.
- fining of (SOC. ANON. DES MANUF. DES GLACES ET PROD. CHIM. DE ST. GOBAIN CHAUNY & CIREY), (P.), B., 824.
- furnace for electrofining of (CLARK), (P.), B., 789*.
- melting and fining of (HARRINGTON and PITTSBURGH PLATE GLASS Co.), (P.), B., 128; (PIKE and COLE-FRENCH Co.), (P.), B., 980.
- furnace for melting (YUNG), (P.), B., 55; (MAMBOURG and LIBBEY-OWENS SHEET GLASS Co.), (P.), B., 879.
- alloy for containers for melting (BRYCE), (P.), B., 824.
- control of softening temperature of (SPROESSER and WESTINGHOUSE LAMP Co.), (P.), B., 192.
- molten, determination of viscosity of (STOTT, TURNER, and SLOMAN), B., 946.
- separation of metals from (SPRINGER), B., 947.
- action of, on refractory materials (BARTSCH), B., 274.
- heating of, to render workable (VAN METER), (P.), B., 440.
- index of refraction of, at high temperatures (PETERS), B., 666.
- ray-transmission of (SUGIE), B., 54.
- passage of electricity through (FERGUSON and ELLIS), A., 31.
- resistant to temperature changes (JENAER GLASWERK SCHOTT & GEN., SCHOTT, and THIENE), (P.), B., 55.
- elastic after-effect in, at different temperatures (KÖNIG), B., 93.
- viscosity of (FÜLCHER), B., 157.
- effect of composition on (ENGLISH), B., 585.
- constrained crystallisation of (PONOMAREV), B., 877.
- adsorption of crystal-violet on (VAN DER GRINTEN), A., 467.
- adsorption of gases on (DURAU), A., 898; (CRESPi and MOLES), A., 1002, 1200.
- suitable for automatic glass-forming machines, composition of (TURNER), B., 585.
- perforation of (INGE and WALTHER), A., 778.
- rupture of (PRESTON), B., 1014.
- resistance of sillimanite to corrosion by (COUSEN, ENGLISH, and TURNER), B., 240.
- coloration of, with arsenious acid (FUWA), B., 53.
- by carbon and its compounds (FUWA), B., 54.
- by fluorine compounds (FUWA), B., 13.
- with phosphates (FUWA), B., 53.
- by selenium (FUWA), B., 14.
- Glass, coloration of, by sulphur and its compounds (FUWA), B., 13.
- production of copper mirrors on (BAMBERGER and SCHWEIZER), (P.), B., 241.
- silvering of (DEUTSCHE GASÖHLUCHT-AUER GES.), (P.), B., 55.
- machine for transverse tests of (HARRISON), B., 127.
- varieties of (JENAER GLASWERK SCHOTT & GEN.), (P.), B., 274.
- physical properties of (TURNER), B., 789.
- absorption of copper oxide in (ZSCHIMMER, GRISAR, and MEESS), B., 877.
- alkali-lime, transmission of ultra-violet rays by (SUGIE), B., 54.
- pure and aluminous alkali-lime-silicate, fining of, with saltcake or arsenic (ZSCHIMMER, ZIMPELMANN, and RIEDEL), B., 876.
- chemical and heat-resisting, influence of boric oxide on (TURNER and WINKS), B., 238, 584.
- chemically inferior, recognition of (FRIEDRICHS), B., 585.
- colourless Crookes' (CHANCE BROS., GELL, GOULD, HAMPTON, and MARTIN), (P.), B., 878.
- cord-free (COMP. DES LAMPES), (P.), B., 275.
- industrial, expansion of (SAMSOEN), B., 585.
- Jena, thermal expansion of (VAN AGT and ONNES), A., 231.
- lead borate, devitrification of (SMITHELLS), B., 746.
- light-dispersing (SCHOTT), B., 407.
- machine-made table (SCHMIDT), B., 947.
- neutral, for pharmaceutical purposes, Baroni reaction for (TIRELLI), B., 440.
- non-actinic cobalt blue (COBLENTZ and FINN), B., 667.
- optical (HEINRICHS and TEPHOL), B., 238.
- nomenclature and classification of (NICOLARDOT), B., 407.
- plate, manufacture of (RIECHERS), (P.), B., 668; (HEUZE), (P.), B., 1015.
- temperature-time curves of devitrification of (ZSCHIMMER and DIETZEL), B., 877.
- potash-lead oxide-silica, effect of chlorides on properties of (FIRTH, HODKIN, MUIRHEAD, PARKIN, and TURNER; FIRTH, HODKIN, and TURNER), (P.), B., 745.
- pyrex, temperature of, in sunlight (LITTLETON and SHAVER), B., 916.
- quartz, melting of (DEUTSCH-ENOLISCHE QUARZSCHMELZES and v. HIRSCHBERG), (P.), B., 824.
- production of rods of (MILLER and BRITISH THOMSON-HOUSTON Co.), (P.), B., 128.
- substitutes for (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 203.
- resistant (BUCK), (P.), B., 362.
- sheet, manufacture of (HITCHCOCK), (P.), B., 128; (DANNER), (P.), B., 158*, 948; (LIBBEY-OWENS SHEET GLASS Co.), (P.), B., 363*; (HARTFORD-EMPIRE Co.; ERIE GLASS Co.; SOC. ANON. DES MANUF. DES GLACES ET PROD. CHIM. DE ST. GOBAIN, CHAUNY & CIREY), (P.), B., 1015.
- drawing and flattening of (EMPIRE MACHINE Co.), (P.), B., 192*.
- drawing apparatus for (LIBBEY-OWENS SHEET GLASS Co.), (P.), B., 668.
- silica (MILLER and GEN. ELECTRIC Co.), (P.), B., 14*.
- production of (HARTZ), (P.), B., 128.
- elongated articles of (BRITISH THOMSON-HOUSTON Co. and NIEDERGESASS), (P.), B., 489.
- transparent, manufacture of (GEORGE), B., 360.
- soda-lime, electrolysis of (MULLIGAN), A., 31.
- soda-lime-silica, influence of moisture on mixing of batches for (PARKIN and TURNER; FIRTH, HODKIN, PARKIN, and TURNER), B., 745.
- containing excessive amounts of arsenious oxide, devitrification of (PARKIN and TURNER), B., 585.
- function of arsenic in (FIRTH, HODKIN, PARKIN, and TURNER), B., 585.
- soda-silica, dilatation and thermal study of (SAMSOEN), B., 709.
- Thuringian (ECKERT), B., 746.
- unsplinterable (HOPE), (P.), B., 747.
- window, composition of (ARTHUR), B., 488.
- detection of cadmium and arsenic in (GEILMANN), B., 877.
- Glass batch (CORNING GLASS WORKS and TAYLOR), (P.), B., 408.
- furnaces, sillimanite in (CLARK and REES), B., 239.
- crucible (TEISEN), (P.), B., 542.
- tank (FERNGREN, and LIBBEY-OWENS SHEET-GLASS Co.), (P.), B., 542; (MCARTHUR and BLAWKNOX Co.), (P.), B., 980.
- industry, fifty years in (SILVERMAN; MOREY), B., 824.

- Glass industry, temperature-sensitiveness of refractory materials in (ENDELL and STEGER), B., 789.
 paper, manufacture of (KLEIN and BROWN), (P.), B., 948.
 pots, preheating of (OAKLEY), B., 239.
 sillimanite refractories for (MCINTYRE), B., 585.
 refuse, porous articles from (NETTEL), (P.), B., 192.
 stone, new (PECK), B., 877.
 tank blocks, corrosion of (FLINT and PAYNE), B., 916.
 ware, machinery for manufacture of (HARTFORD-EMPIRE Co.), (P.), B., 918.
 annealing of (FRINK), (P.), B., 489*.
 lehrs for annealing (HARTFORD-EMPIRE Co.; ILLINOIS PACIFIC GLASS Co.), (P.), B., 1015.
- Glauber's salt. See Sodium sulphate.
- Glaucine, identity of boldine dimethyl ether and (WARNAT), A., 311.
- Glaucoma piriformis*, variations of nitrogen in cultures of (LVOV and ROUKHELMAN), A., 979.
- Glazes, production of (SOMMER, GROTH, and CHEM. WERKE AUERGES.), (P.), B., 90*.
 production of opacity in (KRETZER), (P.), B., 129.
 use of eutectics as (KRÄNER), B., 632.
 chromate (KONDO), B., 90.
 chrome aventurine (KONDO), B., 90.
 iron aventurine (KONDO), B., 54.
 red (PATENT-TREUHAND GES. F. ELEKTR. GLÜHLAMPEN and NACHOD), (P.), B., 275.
 salt, production of (SCHURECHT), (P.), B., 586.
- Glazed ware, manufacture of (TRAUBE), (P.), B., 90*.
- Gladiin, tryptic digestion of (ABDERHALDEN), A., 852.
- Globulin and albumin in serum proteins (ARND and HAFNER), A., 421.
 serum, acetylation of (TROENSEGAARD and KOUDAH), A., 1166.
 cholesterol in (TROENSEGAARD and KOUDAH), A., 634.
- Globulins, physical chemistry of (SPIEGEL-ADOLF), A., 353.
 serum, relation of, to "creaming" of milk (BROUWER), B., 337.
- Glucosarabiose, derivatives of (ZEMPLÉN), A., 823.
- Gluconic acid, formation of, by *Aspergillus niger* (BERNHÄUER), A., 978.
 action of moulds on (WEHMER; SCHREYER), A., 147.
- Gluconic acid, γ -amino- (FREUDENBERG, BURKHART, and BRAUN), A., 601.
- Glucoulo acids, preparation of (KILIANI), A., 940.
 formation of lactones from (LEVENE and SIMMS), A., 1025.
 methylated, rotation of (LEVENE and MEYER), A., 49.
- β -Glucosinolactone, structure of (HAWORTH and NICHOLSON), A., 1025.
- Glucophosphoric acid, calcium salt (SABETAY), A., 1123.
- Glucosamine, rotatory power of, in relation to hydrogen-ion concentration (VELLINGER), A., 778.
 influence of, on insulin hypoglycemia (MOSCHINI; REEVES and HEWITT), A., 1063.
- Glucosan, physiological behaviour of (DEUEL, WADDELL, and MANDEL), A., 973.
- β -Glucosan, polymerisation of (IRVINE and OLDHAM), A., 153.
- Glucose, new-, formation of, from dextrose (ANDERSON and CARRUTHERS), A., 861.
 in biological fluids (LUNDGAARD and HOLBOLL), A., 861.
 See also Neoglucose.
- Isopropylidene ether, acyl derivatives of (OHLE and SPENCKER), A., 1126.
 preparation of methylated glucosides from (LEVENE and MEYER), A., 1228.
- p*-toluenesulphonyl derivatives of (OHLE and DICKHÄUSER), A., 151.
 γ -chloro-, synthesis and properties of (ALLISON and HIXON), A., 386.
- Glucose, γ -amino-, and its diisopropylidene ether, and their derivatives (FREUDENBERG, BURKHART, and BRAUN), A., 601.
- d*-Glucose. See Dextrose.
- ζ -Glucose anhydride, *p*-toluenesulphonyl derivative (OHLE and DICKHÄUSER), A., 151.
- $\alpha\beta$ -Glucose, "new glucose" in fermentation of (LUNDGAARD and HOLBOLL), A., 1061; (LUNDGAARD, HOLBOLL, and GOTT-SCHALK), 1171.
- h*-Glucose, constitution of (SCHLUBACH and v. BOMHARD), A., 600.
- γ -Glucose, stable, and its *penta*-acetates (PRINGSHEIM and BEISER), A., 1229.
- Glucoses, methylated, oxidation of (SOBOTKA), A., 1026.
- d*-Glucoscarbamide, and its derivatives (HELPERICH and KOSCHE), A., 273.
- Glucosephosphoric acid (SABETAY and ROSENFELD), A., 152.
- d*-Glucosethiocarbamide, pentabenzoyl derivative (HELPERICH and KOSCHE), A., 273.
- Glucoseureide, and its carbamide compound (HYND), A., 501.
- α -Glucosidase from yeast, specificity of (HELPERICH, KLEIN, and SCHÄFER), A., 274.
- Glucosides, synthesis of, from pyrimidine derivatives (HAHN, FASOLD, and SCHÄFER), A., 275.
 containing nitrogen, synthesis of (HELPERICH and KOSCHE), A., 273.
 enzymic cleavage of (JOSEPHSON), A., 1174.
- α -Glucosides, synthesis of (BRIGL and KEPPLER), A., 941.
- Glucosides. See also:—
- | | |
|-----------------|---------------|
| Amygdalin. | Robinoside. |
| Asperuloside. | Salicin. |
| Cyanilin. | Salidroside. |
| Mellitoside. | Sinigrin. |
| Oleandrin. | Strophanthin. |
| Quercimeritrin. | Ulexoside. |
| Polydatoside. | Violutoside. |
- 4'- β -Glucosidoxy-7-hydroxy-3-methoxyflavylium chloride, and its 4'-tetra-acetyl derivative (ROBERTSON and ROBINSON), A., 956.
- 4'- β -Glucosidoxy-7-hydroxy-3-methoxy-5-methylflavylium chloride, and its tetra-acetyl derivative (ROBERTSON and ROBINSON), A., 956.
- β -Glucosidoxy- ω -methoxyacetophenone, *p*-tetra-acetyl derivative (ROBERTSON and ROBINSON), A., 956.
- Glucosone, utilisation of, in diabetes (THANNHAUSER and JENKE), A., 317.
- d*-Glucosyl fluoride, and its derivatives (HELPERICH, BÄUERLEIN, and WIEGAND), A., 386.
- Glue, manufacture of (BIERLING; ELLENBERGER & SCHRECKER and HUPPERT), (P.), B., 600.
 extraction of, from bones (SHEARMAN), (P.), B., 377.
 production of, from fish (KERNOT and SPEER), B., 557.
 treatment of chrome leather waste for manufacture of (MEIER), (P.), B., 335.
 manufacture of small balls or grains of (OBERSOHN, WACHTEL, and ASKENASY), (P.), B., 24.
 production of granules of (AKT.-GES. F. CHEM. PRODUKTE), (P.), B., 990.
 manufacture of tablets of (COMP. NAT. MAT. COL. ET MANUF. PROD. CHIM. NORD RÉUNIES, ÉTAB. KUHLMANN), (P.), B., 990.
 electro-osmotic purification of (RUPPEL, WOLF, and AMER. ELECTRO-OSMOSIS CORP.), (P.), B., 456.
 water content of, and its importance in valuation (BAUM), B., 958.
 properties of various samples of (ARAKI), B., 639.
 joints, examination of, by X-rays (ROYAL AIRCRAFT ESTABLISHMENT), B., 557.
 stock, production of pyrrole and its derivatives and pyrocoll from (MICHELMAN), (P.), B., 463.
 water, extraction of, from whale blubber and flesh, fish products, etc. (HOLTER and THUNE), (P.), B., 448.
 bone (KERNOT and SPEER), B., 557.
 liquid, determination of water content of (KINGMAN), B., 206.
 vegetable, production of (LESZYNSKI), (P.), B., 602.
- Glutaconic acid, mercury derivatives of (VERKADE), A., 820.
 esters, condensation of, with cyanoacetic esters (KOHLER and REID), A., 48.
- Glutaconic acid, β -hydroxy-, acetyl derivative, ethyl hydrogen ester (MALACHOWSKI), A., 732.
- Glutaconic acids (PACKER and THORPE), A., 820; (FARMER and RICHARDSON), A., 1039.
 halogenated (HUNTER), A., 1125.
- Glutamic acid, and its salts, manufacture of (IREDA), (P.), B., 420, 514*.
- d*-Glutamic acid, configuration of (KARRER, ESCHER, and WIDMER), A., 505.
- d*-Glutamine, acetyl derivative (KARRER, ESCHER, and WIDMER), A., 505.
- Glutaranilic acid *o*-disulphide (BOGERT and STULL), A., 310.
- Glutaric acid, $\alpha\beta$ -dihydroxy-, and $\beta\beta$ -dihydroxy-, anhydride, acetyl derivative (MALACHOWSKI), A., 732.
- Glutaric acids, $\alpha\alpha'$ -dibromo-, configuration of, and $\alpha\alpha'$ -diiodo-, and their derivatives (ING and PERKIN), A., 48.
- Glutathione, influence of, on oxidation of fats and fatty acids, (ALLOTT), A., 1172.
 biological significance of (VOEGTLIN, JOHNSON, and DYER), A., 863.

- Glutathione, reversible system of reduced and oxidised (KENDALL and NORD), A., 1129.
determination of, in tissues as a function of age (MURRAY), A., 751.
- Gluten (D'ARBOUET), B., 688.
- Glutin, conductivity of acid solutions of (PAULI and WIT), A., 1007.
- Glucose, preparation of (SPOHR and WILBUR), A., 1126.
biochemistry of (BENEDICT, DAKIN, and WEST), A., 754.
- Glyceraldehyde, influence of, on insulin hypoglycaemia (REEVES and HEWITT), A., 1063.
- dl*-Glyceraldehyde, oxidation of (EVANS, BUEHLER, LOOKER, CRAWFORD, and HOLL), A., 148.
action of potassium hydroxide on (EVANS and HASS), A., 1226.
- Glycerides, catalytic decomposition of (SIMONS), A., 936.
interaction of, with other esters (VAN LOON), (P.), B., 553.
acetyl value and ester transformation of (HOLDE), A., 1123.
of mixed acids, saponification of (TREUB), A., 481.
mixed, of higher and lower fatty acids (SCHWARTZ and DU PONT DE NEMOURS & Co.), (P.), B., 66.
separation of, from fats and oils (ALLGEM. GES. F. CHEM. IND.), (P.), B., 332.
- Glycerin. See Glycerol.
- Glycerol (*glycerin*; *ary-trihydroxypropane*) from vinasses (Soc. DES ÉTABL. BARBER), (P.), B., 893.
continuous production of fatty acids, ammonium sulphate, and (GRAUBNER), (P.), B., 332.
dielectric constant and absorption of electric waves for (MIZUSHIMA), A., 778.
specific heat of (SAMSOEN and MONDAIN-MONVAL), A., 567.
deliquescence of (SWAN), B., 978.
crystallisation of (SAMSOEN), A., 568.
ionic activity of water in aqueous solutions of (COLVIN), A., 245.
oxidation of, to dihydroxyacetone by bacteria (VIRTANEN and BÄRLUND), A., 545.
condensation of pyrocatechol with (KAWAI), A., 290.
solutions from saponification of fats, purification of (HAUSMANN), B., 593.
bromohydrin acetate (ROSENZWEIG and LEGERLOTZ), (P.), B., 964.
chlorohydrin, preparation of (BÖESEKEN and HERMANS), A., 1122; (FOURNEAU and MARQUÈS), A., 711.
diisopropylidene ether, *p*-toluenesulphonate of (FREUDENBERG and HESS), A., 935.
glucoside, and its hexamethyl derivative (GILCHRIST and PURVES), A., 153.
 α -iodohydrin, action of potassium stearate on (GRÜN and LIMPÄCHER), A., 596.
naphthyltriurethane from (BICKEL and FRENCH), A., 517.
nitrate (*nitroglycerin*) powders, acidity and stability of (TONEGUTTI), B., 174, 805.
sulphonic and benzoic acid esters of (FAIRBOURNE and FOSTER), A., 145.
analysis of, by the acetic or dichromatic methods (PRAGER), B., 923.
detection and determination of, in cotton cloths and yarns (SMITH), B., 530.
detection and determination of, in tobacco (CHAPMAN), B., 801.
- Glycerol- α -phosphoric acid, resolution of (KARRER and BENZ), A., 383, 818.
- Glycerolphosphoric acids and their dimethyl ethers from lecithin (KARRER and SALOMON), A., 384.
- Glycerophosphates, preparation of (RIEDEL and ROSENBUSCH), (P.), B., 385.
commercial, analysis and composition of (FERREY), B., 803.
- Glycerophosphoric acid, calcium salt (SABETAY), A., 1123.
- Glycide, reaction of, with phosphoric acid (ZETZSCHE and AESCHLMANN), A., 1225.
- Glycine, solubility of, in aqueous and aqueous alcoholic solutions (SANO), A., 672.
effect of salts on (ANDO), A., 898.
equilibrium between dextrose, the glucoside, and (v. EULER and BRUNIS), A., 940.
action of dextrose on (v. EULER and JOSEPHSON), A., 714.
compounds of formaldehyde with (KRAUSE), A., 276.
chromium complex compounds with (FLORENCE and COUTURE), A., 715.
butyl esters, and their derivatives (MORGAN), A., 276.
- Glycine anhydride, new form of (ABDERHALDEN and SCHWAB), A., 181.
cnolic form of, and its benzoyl derivative (ABDERHALDEN and SCHWAB), A., 740.
- Glycogen, preparation of, from yeast (YOKOYAMA), A., 758.
synthesis and fermentation of, by yeast (GOTTSCALK), A., 544.
formation of, in relation to oxidation of sugars (C. F. and G. T. CORI), A., 1271.
transformation of (LUNDGAARD and HOLBOLL), A., 644.
sols, action of electrolytes on (DOKAN), A., 23.
use of, in preparation of colloidal metals (HUGOUNENQ and LOISELEUR), B., 384.
in the liver during action of insulin (GREVENSTUK and LAQUEUR), A., 870; (FRANK, NOTHMANN, and HARTMAN), A., 1278.
liver, transformation of, into dextrose (LUNDGAARD and HOLBOLL), A., 861.
in liver and muscle in arsenic poisoning (PADERI), A., 756.
in salivary glands (YAMAGUCHI), A., 87.
determination of (OHARA), A., 984.
- Glycogenase, optimum hydrogen-ion concentration for (VISSCHER), A., 976.
- Glycol ethers, use of, in the lacquer industry (DAVIDSON), B., 714.
diacetate, properties of (TAYLOR and RINKENBACH), A., 710.
- Glycols, dehydration of (McKENZIE and DENNLER), A., 834.
- α -Glycols, dehydration of (FAVORSKI and TCHILINGAREN), A., 272; (DOLGORAKOVA-DOBRIANSKA), A., 818.
from hydrobenzoin, dehydration of (DANILOV and VENUS-DANILOVA), A., 519.
aliphatic trisubstituted (NICOLLE), A., 382.
- γ -Glycols, acetylenic, action of hydrogen bromide and phosphorus tribromide on (KRESTINSKY; SALKIND and KRUGLOW), A., 1121.
- Glycolbenzylsulphonylamide (CURTIUS and JEREMIAS), A., 416.
- Glycollic acid, preparation of, electrolytically (TOJA and CEVA), B., 690.
chloroethyl ester (ABDERHALDEN, PAFFRATH, and SICKEL), A., 97.
- Glycollic acid, thio-, antimony sodium salt, preparation of (FARB. v. BAYER & Co.), (P.), B., 385.
trithio-, barium and sodium antimony salts (FARBENFABR. VORM. BAYER & Co.), (P.), B., 996.
- Glycol-*p*-toluenesulphonylamide (CURTIUS and KLAHEHN), A., 415.
- Glycolysis (BRUGSCH and HORSTERS), A., 197.
in animal tissues (LOEBEL), A., 84.
in blood (RONA and IWASAKI; HOLBOLL; VIVIANI), A., 1051.
with reference to insulin (BRUGSCH and HORSTERS), A., 1055.
- Glycometamorphosis with reference to insulin (BRUGSCH and HORSTERS), A., 1055.
- Glycosine (*di-iminazoly*), dyestuffs from (LEHMSTEDT), (P.), B., 7.
- Glycosine, *tetranitro*- (LEHMSTEDT), (P.), B., 869.
- Glycosuria. See Diabets.
- Glycuronic acid, origin of, in the organism (QUICK), A., 1271.
excretion of, after administration of sodium benzoate (BIGNAMI), A., 90.
determination of, in urine (BRÜLÉ, GARBAN, and AMER), A., 317.
- Glycuronic acids, conjugated, production of, by depancreatised dogs (QUICK), A., 1169.
- Glycyl-1-alanyl-1-alanylglycine (LEVENE and PFALTZ), A., 1259.
- Glycyl-1-alanylglycine, action of alkali on, and its chloroacetyl derivative (LEVENE and PFALTZ), A., 852.
- γ -Glyclamino- β -hydroxybutyric acid (TOMITA), A., 1129.
- Glycylarsanilic acid, derivatives of (GIEMSA and TROPP), A., 1162.
- Glycylglycine, effect of, on respiratory metabolism (PLUMMER, DEVEL, and LUSK), A., 1055.
action of erepsin on (v. EULER and JOSEPHSON), A., 1174.
benzoyl derivative (ABDERHALDEN and SCHWAB), A., 740.
reaction product from heating diphenylamine with (ABDERHALDEN and HAAS), A., 716.
- Glycylglycyl-1-alanylglycine, and its action with alkali (LEVENE and PFALTZ), A., 852.
- Glyoxal, and its derivatives (FISCHER, TAUBE, and KÜHN), A., 599.
- Glyoxalacetic acid, α -bromo-, ethyl ester (RUGELEY and JOHNSON), A., 147.
- Glyoxalase in rabbit's muscle (DUDLEY), A., 640.
- Glyoxal dibromodithiopyrocatechol, constitution of (GUHA and CHAKLADAR), A., 398.
- Glyoxaline compounds, crystal structure of (GREENWOOD), A., 563.

- Glyoxaline-4'(or 5')-carboxy-p-amino-3-aminophenylarsinic acid**, and its salts and derivatives (BALABAN and KING), A., 187.
- Glyoxaline-4(or 5)-carboxyaminoanilides**, and their derivatives (BALABAN and KING), A., 187.
- Glyoxaline-4(or 5')-carboxy-p-amino-3-nitrophenylarsinic acid**, and its salts (BALABAN and KING), A., 187.
- Glyoxaline-4(or 5')-carboxy-p-aminophenylarsinic acid** (BALABAN and KING), A., 187.
- Glyoxaline-4(or 5)-carboxynitroanilides**, and their derivatives (BALABAN and KING), A., 187.
- Glyoxaline-4(or 5)-phenyl-p-arsinic acid**, and its salts (BALABAN and KING), A., 187.
- Glyoximes**, dibromo-, and nitro-, and their derivatives (PONZIO and DE PAOLINI), A., 825.
- hydroxy-. See α -Ketoformhydroxamic acids.
- Glyoxylic acid**, preparation of, from oxalic acid, and its determination (MOHRSCHELTZ), A., 1110.
- preparation and oxidation of (HATCHER and HOLDEN), A., 270.
- Goats**, effect of iodine on (NIKLAS, STROBEL, and SCHARER), A., 638.
- Goethite**, identity of fibrillar limonite with (GAUBERT), A., 42.
- Goutre**, filtration of water in connexion with (DON), B., 517.
- exophthalmic, storage of glycogen in (RICHARDSON, LEVINE, and DU BOIS), A., 637.
- Gold in Dartmoor granite** (BRAMMALL), A., 594.
- in mercury (VENATOR), A., 486.
- formation of, from mercury (MIETHE and STAMMREICH), A., 367; (PIUTTI and BOGGIO-LERA), A., 699; (HABER, JAENICKE, and MATTHIAS), A., 699, 922; (RIESENFELD and HAASE; TIEDE, SCHLEDE, and GOLDSCHMIDT), A., 922; (GARRETT; SMITS), A., 1015.
- preparation of, from mercury (SIEMENS & HALSKE), (P.), B., 370.
- transformation of, into mercury (GASCHLER), A., 656.
- arc spectrum of (MCLENNAN, SMITH, and PETERS), A., 107; (MCLENNAN and McLAY), A., 875.
- under-water spark spectrum of (BUFFAM and IRETON), A., 1.
- effect of temperature on spectral emissivity of (WORTHINO), A., 892.
- spectral lines of thallium and (NAGAOKA and FUTAGAMI), A., 1017.
- electrical resistance of (MEISSNER), A., 1086.
- emission of secondary electrons from (PETRY), A., 989.
- lattice constants of (BARTH and LUNDE), A., 664, 1195.
- crystals, tensile strength of (ELAM), A., 1085.
- distillation of, with mercury (MIETHE and STAMMREICH), A., 493.
- chemistry of (LEHNER and KAO), A., 238.
- interaction of hydrogen and nitrous oxide on the surface of (HUTCHISON and HINSHELWOOD), A., 807.
- precipitation of, electrolytically, from solutions (BATES), (P.), B., 97.
- assay of (PINTO), B., 829.
- influence of small amounts of lead on (NOWACK), A., 896.
- behaviour of platinum metals towards, during cupellation (TRUTHIE), A., 896.
- recovery of, by amalgamation (HAMILL), (P.), B., 197.
- recovery of copper, silver, and, from ores (WELCH and INTERNATIONAL PRECIPITATION Co.), (P.), B., 444.
- and its alloys with copper and silver, precipitation of radium-F' on (TAMMANN and RIENÄCKER), A., 1190.
- colloidal (v. WEIMAR), A., 792, 902; (RIMINI), A., 792.
- preparation of, and its use in detection of blood (MANHEIMS and BERNHARD), A., 1168.
- adsorption of crystal-violet on (VAN DER GRINTEN), A., 467.
- migration velocity and charge number of (PAULI), A., 241.
- rate of migration of (FUCHS and PAULI), A., 354.
- action of proteins on (VERNICKE and MODERN), A., 1005.
- analysis and constitution of (FUCHS and PAULI), A., 22.
- sols, preparation of (BENDIEN), A., 575.
- from alkaline gold chloride solutions (ZAKOWSKI), A., 1095.
- swelling value of (HAKOZAKI), A., 1005.
- effect of temperature on coagulation of (GARNER and LEWIS), A., 1204.
- catalysis of hydrogen peroxide by (GALECKI and BINCER; GALECKI and KRZECZKOVSKA), A., 251.
- natural (SHEMTSCHUSINI), A., 1224.
- Gold alloys** (DAVIGNON), (P.), B., 63; (HANSEN), (P.), B., 133; (SHIELDS and SHIELDS & MOORE), (P.), B., 548; (KORSUNSKY), (P.), B., 755.
- dental, analysis of (SWANGER), B., 1017.
- white (WISE and WADSWORTH WATCH CASE Co.), (P.), B., 444; (BELAIS and BELAIS), (P.), B., 590.
- with copper, crystal structure of (JOHANSSON and LINDE), A., 112.
- tarnishing of, in oxygen, carbon dioxide containing hydrogen sulphide, and in air containing iodine (TAMMANN and RIENÄCKER), B., 1017.
- with copper and silver (STERNER-RAINER), A., 666.
- with mercury (BRITTON and MCBAIN), A., 474.
- with nickel (FRAENKEL and STERN), A., 344.
- with silver, electrolytic refining of (COLCORD), B., 494.
- Gold sodium thiosulphate** (GELARIE and GREENBAUM), A., 926.
- Aurous oxide, existence of (POLLARD), A., 809.
- colloidal (STEIGMANN), A., 923.
- Chloroauric acid, action of mercurous nitrate on (POLLARD), A., 487.
- Chloroaurates, thermal dissociation of (PARRAVANO and MALQUORI), A., 800.
- Gold organic compounds** obtained biochemically (RIMINI), A., 792.
- Gold determination and separation**:-
- determination of, electrometrically (MÜLLER and WEISBROD), A., 1117.
- determination of, in anode slimes (ECKERT), B., 243.
- determination of, in mercury (RIESENFELD and HAASE), A., 264; (TAMMANN and KOLLMANN), A., 377.
- determination of, in ore concentrates (DAVIS), B., 589.
- determination of, in organic material (COQUOIN), A., 648.
- determination of, in tissues (LOMHOLT), A., 328.
- separation of, from mercury (DUHNE and LOTZ), A., 930.
- separation of, from silver, electrolytically (VANIUKOV), B., 1019.
- Goniometer**, X-ray (GREENWOOD), A., 563.
- Gorli oil** (ANDRÉ), B., 98.
- Gossypol**, and its d-form, content of, in N. Carolina cottonseed meals (SHERWOOD), B., 564.
- Gout**, formation of deposits in (DHAR), A., 426.
- Grain**, pickling of, with mercuriferous germicides (KRAUSS), B., 30.
- seed, treatment of (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 559.
- Gramineæ**, levulosans from (COLIN and DE CUGNAC), A., 1066.
- nitrogen in (RIFFEL and LUDWIG), A., 439.
- Graminin**, properties of (COLIN and DE CUGNAC), A., 1066.
- Granite**, anorthite and biotite in (CHIRVINSKI), A., 594.
- finely-crushed, production of (HACK and BURT), (P.), B., 55.
- Dartmoor, gold and silver in (BRAMMALL), A., 594.
- Grapes**, effect of sun on ripening of (HUGUES), B., 380.
- and their fermentation products, methyl alcohol in (VILAR), B., 562.
- pectins of (SEMICHON and FLANZY), B., 844.
- Grape musts**, influence of sugars on determination of ammonia in (VENTRE and BOUFFARD), B., 417, 509*.
- Grape residues**, utilisation of (DUPLAN), (P.), B., 85.
- Graphite**, structure of (BRUNNER and HAMMERSCHMID), A., 996.
- manufacture of (WEAVER), (P.), B., 440; (A.-G. F. ANILIN-FABR.), (P.), B., 916.
- electrolytic purification of (HAFFNER), (P.), B., 986.
- melting point of (RYSCHKEWITSCH), A., 232.
- deflocculation of (ACHESON), (P.), B., 857.
- ignition temperature and reactivity of (BUNTE), B., 257.
- rôle of, in lubrication (KOETHEN), B., 567.
- improvement of efficiency of lubricating oils by (BACHMANN and BRIEGER), B., 777.
- incorporation of, with bearing metal (CRIMP), (P.), B., 635.
- vehicle for (V. and H. LANGE), (P.), B., 796.
- suspensions, relation between number and size of particles, and light absorption of (HEBLER), B., 638.
- Grass**, vitamin-C in (BROUWER), B., 213.
- meadow, effect of soil reaction on germination of (MÜLLER), A., 1066.
- pasture, mineral content of, and its effect on herbivora (ELLIOT, ORR, WOOD, CRICHTON, CRUIKSHANK, and GODDEN), B., 251.
- Grass land**, effect of nitrogenous manuring of, on proportion of grass and clover (JESSEN), B., 959.

Greases, extraction apparatus for (MACGREGOR and SCOTT & Co.), (P.), B., 923.

Grignard reaction, abnormal course of (STADNIKOV and WEIZMANN), A., 512.

Grignard reagents, constitution of (MEISENHEIMER), A., 68.

preparation of, with ordinary ether in a test tube (SCHMALFUSS), A., 718.

luminescent (EVANS and DIEPENHORST), A., 506.

adsorption of carbon monoxide by, in presence of chromic chloride (JOB and CASSAL), A., 917.

coupling action of (FUSON), A., 604, 1237.

action of, on amino-acids (BETTIECHE and EHRLICH), A., 154, 155, 1234.

action of, with nickel carbonyl and carbon monoxide (GILLILAND and BLANCHARD), A., 603.

determination of (GLIMAN and MEYERS), A., 535.

Grinding (BARTHELMESS), (P.), B., 775.

mill for drying and (INTERNAT. COMBUSTION ENGINEERING CORP.), (P.), B., 144.

fine, theory of (MARTIN, BOWES, and CHRISTELOW; MARTIN, BOWES, and TURNER), B., 903.

Grinding apparatus (CHAMBERS), (P.), B., 648.

Grinding machines (HARDINGE), (P.), B., 1; (RAMSAY and MAYHEW), (P.), B., 80; (CHARTON and MONGEREAU; GRIFFIN and VICKERS, LTD.), (P.), B., 696*.

for coal, etc. (TWORT), (P.), B., 82*.

Grinding materials (RHEINISCHE MASCHINENFABR.), (P.), B., 729.

Grinding mills. See under Mills.

Growth, effect of irradiation of environment on (HUME and SMITH), A., 644.

the effect constant in curves of (RIPEEL; MITSCHERLICH), B., 1024.

energetics of (BONNET, DUQUÉNOIS, and VINCENT; TERROINE and BONNET), A., 1178.

accessory factors in (v. EULER and RYDBOM), A., 760, 871.

effect of diet on (OSBORNE and MENDEL), A., 1180.

influence of diet on nitrogen retention during (TERROINE and MENDLER), A., 197, 428.

Guadalcazarite, crystal structure of (HARTWIG), A., 664.

Guaiacol, thallos salt (CHRISTIE and MENZIES), A., 56.

α -naphthylurethane from (FRENCH and WITTEL), A., 830.

derivatives of (WINKELBLECK), A., 60.

Guaiacol, 6-amino-, 3-nitro-, dinitro-, and 3:4:6-trinitro-, and their salts and derivatives (OXFORD), A., 1035.

5-nitrothio- (HOLMES and C. K. and E. H. INGOLD), A., 947.

Guaiacolphosphoric acid, metallic salts (ZETSCHE and NACHMANN), A., 1242.

Guaiacum reaction, mechanism of (UYS-SMITH), A., 542.

Guaiazulene (RUZICKA and RUDOLPH), A., 299.

Guanidine, hydrolysis of (BELL), A., 825.

toxicity of, with administration of dextrose (BAKUCZ), A., 200.

action of parathyroid extracts on (WHITE and CAMERON), A., 1180.

metallic chromates and sulphates of (CANNERY), A., 55.

cobalt, manganese, and nickel molybdates (DI CAPUA), A., 304.

nitrate, freezing point of, in cyclohexanol (SCHREINER and FRIVOLD), A., 1208.

derivatives (SCHENCK and KIRCHHOF), A., 1129.

physiological action of (ALLES), A., 1057.

determination of small amounts of, nephelometrically (RITTMANN), A., 967.

Guanidines (SCHOTTE and PRIEWE), A., 717.

methylated, from urine in parathyroid tetany (KÜHNAU), A., 196.

substituted, decomposition of, at high temperatures (KLINGNER), A., 945.

detection and determination of, in urine (GREENWALD), A., 1068.

Guanidine bases, determination of, in blood and urine in tetany (KÜHNAU), A., 1054.

Guanidinopropane, and its dipicolonate (SCHENCK and KIRCHHOF), A., 1129.

Guanido-*n*-hexoic acids, amino-, and their derivatives (STEIB), A., 825.

Guanidone, amino-, nitrates (ROJAHN and SCHULTEN), A., 843; (ROJAHN and KÜHLING), A., 847.

Gnano, Philippine, nature and availability of the plant-food constituents of (TRONA), B., 684.

Guanylnitrosoaminoquanyltetracene, as primer composition (RATHSBURG), (P.), B., 693.

Guignet's green, isomerism of (WÖHLER and DIERKSEN), B., 166.

"Gulf" disease, cause of (BIGNELLI), B., 302.

Gum, chewing, isophytosterol in (LIFSCHÜTZ and VIETMEYER), A., 982.

ester. See Rosin glyceride.

Gutta-percha, molecular magnitude of (OTT), B., 681.

dielectric constant, power factor, and resistivity of (CURTIS and MCPHERSON), B., 503.

chemistry of (STAUDINGER), B., 289.

Gypsophila, sapogenin from (KARRER and LIER), A., 401.

Gypsum, manufacture of, from anhydrite (FARNSWORTH), (P.), B., 126.

X-ray absorption of calcium in (LINDSAY and VAN DYKE), A., 1186.

heat of solution of (LANGE and DÜRR), A., 29.

drying and calcining of (DRESSLER and AMER. DRESSLER TUNNEL KILNS), (P.), B., 276.

burning of (MASCHINENBAU-ANSTALT & DAMPFKESSELFABR. A.-G. DARMSTADT, FORM. VENULETH & ELLENBERGER, GÖHRIG & LEUCHS, and STEINBRÜCKNER), (P.), B., 790.

decomposition of (RHENANIA VER. CHEM. FABR.), (P.), B., 788.

calcined, effect of the process of manufacture on the properties of (SMITH), B., 790.

Gypsum stone, artificial, manufacture of (CLAASZ), (P.), B., 587.

H.

H-acid (8-amino- α -naphthol-3:6-disulphonic acid) and its acetyl derivative, comparison of azo-dyes from (LEWERS and LOWY), B., 85.

isoHæmagglutination (RONA and KREBS), A., 537.

Hæmatin, oxygen content of, and its determination (ROCHE), A., 854.

in relation to turacin (KEILIN), A., 857.

in pathological sera (SCHUMM), A., 538.

Hæmatins (SCHUMM), A., 538.

Hæmatoporphyrin, constitution of (KÜSTER, MAURER, and PALM), A., 1024.

absorption spectrum of (KAJDI), A., 108.

in body fluids after sulphonal administration (FABRE and SIMONNET), A., 201.

dimethyl ether, dichloro- (KÜSTER and ZIMMERMANN), A., 748.

mothyl ethers, and their derivatives (KÜSTER and MÜLLER), A., 748.

properties and determination of (FABRE and SIMONNET), A., 750.

α -Hæmatoporphyrin (SCHUMM and PAPENDIECK), A., 1269.

α -Hæmatoporphyrinoidin (SCHUMM and PAPENDIECK), A., 1269.

Hæmatoxylin, synthesis of, and its derivatives (PERKIN, RAY, and ROBINSON), A., 732.

Hæmin, basic nature of (KÜSTER), A., 749.

action of yeast on (FISCHER and LINDNER), A., 634.

determination of active hydrogen in (FISCHER and POSTOWSKY), A., 630.

Hæmochromatosis in copper poisoning (MALLORY), A., 976.

Hæmochromogen and hæmoglobin (KÜSTER), A., 315.

compounds of, with oxygen and carbon monoxide (ROCHE), A., 854.

Hæmocyanin (STEDMAN and STEDMAN), A., 1164.

transport of oxygen and carbon dioxide by (REDFIELD, COOLIDGE, and HURD), A., 1050.

Hæmoglobin (BARCROFT), A., 750.

two forms of, and hæmins therefrom (KÜSTER, SCHMID, RUFF, HEES, and HUTTENLOCHER), A., 315.

osmotic pressure of (ADAIR), A., 21.

and of the base bound by it (AUSTIN, SUNDERMAN, and CAMACK), A., 1267.

influence of temperature on equilibrium of oxygen with, in various organisms (MACELA and SELISKAR), A., 634.

adsorption of nitrogen by (CONANT and SCOTT), A., 750.

action of carbon dioxide on (OSBORNE), A., 1267.

action of hydroxylamine on (ROCHE), A., 750.

formation of bile pigments from (MANN, SHEARD, BOLLMAN, and BALDES), A., 634.

pigments related to (OBERZIMMER and WALKER), A., 191.

porphyrins from (PAPENDIECK), A., 631.

effect of age on, in blood (WILLIAMSON and ETS), A., 968.

- Hæmoglobin**, antigenic properties of (ENGELHARDT), A., 193.
catalase property of (KULTJUGIN), A., 432.
and its derivatives, peroxydatic action of iron compounds in relation to (KUHN and BRAUN), A., 1215.
isoelectric crystalline, preparation of (STADIE and ROSS), A., 854.
- Hæmolysis** (MOND), A., 316, 856; (PIETTRE), A., 856; (PONDER), A., 857.
equations for (PONDER), A., 969.
inhibition and acceleration of (PONDER), A., 751.
influence of neutral salts on (KENNEDY), A., 635.
by saponin, effect of sugars on (PONDER and KENNEDY), A., 642.
reversible (BOEENDÖRFER and HALLE), A., 86.
- Hæmopyrrole** methene hydrobromide, brominated (FISCHER and KLARER), A., 1261.
- Hæmorrhage**, effect of, on inorganic constituents of blood (KERR), A., 634.
- Hæmorrhoids**, colloidal magnesium as injection for (KATO), (P.), B., 219*.
- Hæmosiderin** (OBERZIMMER and WALKER), A., 191.
- Hafnium**, crystal structure of (NOETHLING and TOLKSDORF), A., 563.
thermionic emission of (ZWICKER), A., 1188.
deposition of, upon incandescent electric lamp filaments (N. V. PHILIPS' GLOEILAMPENFABR.), (P.), B., 886.
content of, in zircons (PIUTTI), A., 43.
- Hafnium compounds**, separation of, from zirconium compounds (N. V. PHILIPS' GLOEILAMPENFABR.), (P.), B., 273.
- Hafnium ammonium fluoride**, thermal dissociation of (HARTMANN), A., 1007.
halides, separation of, from zirconium halides (N. V. PHILIPS' GLOEILAMPENFABR.), (P.), B., 156.
- Hafnium detection and separation**:—
detection of, colorimetrically (DE BOER), A., 40.
separation of zirconium and (DE BOER), A., 373; (DROPHY and DAVEY; KENDALL and WEST), A., 1117; (N. V. PHILIPS' GLOEILAMPENFABR., COSTER, and HEVESY), (P.), B., 12, 440*, 631*; (VAN ARKEL, DE BOER, and N. V. PHILIPS' GLOEILAMPENFABR.), (P.), B., 745*.
- Hagatalite**, analysis of (KIMURA), A., 144.
- Hair**, composition of (STARY), A., 194.
deodorisation of (GALLAGHER and TANNERS PRODUCTS Co.), (P.), B., 356.
carroting of (BACH), (P.), B., 314.
recovery of mercury in (RHENANIA VEREIN CHEM. FABR.), (P.), B., 871.
normal and "ringed," constituents of (KLINKE), A., 88.
- "Haff disease,"** presence of arsenic in burner gases and its bearing on (GLASER), B., 358.
- Halides**, heats of formation of, in relation to atomic volumes of the halogens (SCHÜTZ and EPHRAIM), A., 1193.
of metals and metalloids, double decomposition between (KARANTASSIS), A., 487.
organic, activity of (PETRENKO-KRITSCHENKO and OPOTZKY), A., 1121.
effect of structure of, on rate of reaction with inorganic halides (KIRNER), A., 1224.
determination of, electrometrically (CLARK), A., 590.
- Hall effect** (HALL), A., 114.
- Halochromy** (SKRAUP and EISEMANN), A., 999.
- Halogens**, continuous absorption and emission spectra of (WOLF), A., 213.
band spectra of (NAKAMURA), A., 882.
volumes of free atoms or ions of (EPHRAIM and SCHÜTZ), A., 1193.
influence of water on action of hydrogen with (LEWIS and RIDEAL), A., 1111.
lability of, in organic compounds (MACBETH, NUNAN, and TRAILL), A., 846.
replacement of, in aromatic compounds (CLARK and CROZIER), A., 158.
determination of, iodometrically (HIBBARD), A., 928.
determination of, by the Meulen-Heslinga method (COHEN), A., 590.
determination of, in organic compounds (VAN DUIN), A., 632; (FUNK and KON), A., 853.
- ψ-Halogens** (BIRCKENBACH and KELLERMANN), A., 30.
- Halogen compounds**, organic, action of alkaline arsenites on (BALABAN), A., 623.
- Halogen compounds**, persubstituted, analogous behaviour of halogenoacyl amines and (SCHMIDT, ASCHERL, and v. KNILLING), A., 1121.
determination of small quantities of (KÖNIG), A., 1017.
- Halogen hydrides**, infra-red absorption spectra of (DENNISON), A., 222.
optical and chemical behaviour of (HANTZSCH), A., 883.
conductivity and catalytic activity of, in *n*-butyl alcohol (GOLDSCHMIDT and MATHIESEN), A., 686.
chemical constants of (RAWLINS), A., 1087.
- Halogen hydrins**, manufacture of (ESSEX, WARD, and DU PONT DE NEMOURS & Co.), (P.), B., 931.
substitution with (GRÜN and LIMPÄCHER), A., 596.
- Hansa yellow G**, constitution of (ROWE, BURR, and CORBISHLEY), B., 310.
- Hardness**, relation of, to atomic concentration of elements (LASAREV), A., 116.
- Harmaline**, and bromo-, oxidation of (HASENFRATZ and SUTRA), A., 531.
- Harmalol**, and bromo-, salts (HASENFRATZ), A., 1264.
- Harmalosulphonic acid** (HASENFRATZ and SUTRA), A., 1264.
- Harmol sulphate**, and bromo- (HASENFRATZ and SUTRA), A., 1264.
- isoHarmol**, bromo- (HASENFRATZ and SUTRA), A., 1264.
- Harmosulphonic acid** (HASENFRATZ and SUTRA), A., 1264.
- Hay**, drying of (DONALD), (P.), B., 644.
- Heart**, action of local anaesthetics on (LASCH), A., 201.
effect of drugs on (SALANT and NADLER), A., 1273.
frog's, action of phosphatides on (EGGLETON), A., 639.
ox, unsaturated fatty acids in muscle of (BLOOR), A., 752.
- Heartwood** (RITTER and FLECK), B., 660.
- Heat**, measurement of flow of (BLACKIE), (P.), B., 520.
means for transfer of (DOBBS), (P.), B., 81*.
transmission of (HEENAN and POWER SPECIALTY Co.), (P.), B., 2.
apparatus for (LYNGER), (P.), B., 34.
energy, distribution of, in organic compounds (ANDREWS), A., 1087.
molecular, of non-associated liquids and their vapours (HOLZSCHMIDT), A., 232.
specific, at low temperatures (SIMON), A., 1103.
in relation to the chemical constant (RAWLINS), A., 567.
of electrolytes (ZWICKY), A., 462.
of ferromagnetic substances (SUCKSMITH and POTTER), A., 893.
of gases (WALKER), A., 15.
of solutions (DE KOLOSOVSKI), A., 236.
theory of (ZWICKY), A., 668.
- Heat capacity** of aromatic compounds (ANDREWS, LYNN, and JOHNSTON), A., 668.
of non-polar solids (SALANT), A., 668.
- Heat exchangers** (ROSZAK), (P.), B., 145*; (JOHNSON and CARBORUNDUM Co.), (P.), B., 256; (SELIOMAN), (P.), B., 521*; (GRISCOM-RUSSELL Co. and PRICE), (P.), B., 616*, 967; (ENGELHART and GRADY), (P.), B., 696; (AKTIEB. LJUNGSTRÖMS ANGTURBIN; LÜTSCHEN; MUNDAY), (P.), B., 729; (MANTLE and CALORIZING Co.), (P.), B., 729*; (CHAVANNE), (P.), B., 808, 967; (SANDBERG), B., 904.
for liquids (SODERLUND, GRAM, and TECHNO-CHEMICAL LABS.), (P.), B., 616.
- Heat-insulating material** (WILKENING; IRVIN and CELITE Co.), (P.), B., 241.
- Heat of activation**, lowering of, by a catalytic surface (BURK), A., 915.
- Heat of adsorption and surface tension** (CASSEL), A., 127.
of electrolytes (LACHS and LACHMANN), A., 1099.
of gases on solids (ILJIN), A., 1104.
- Heat of combustion** (VERKADE and COOPS), A., 28.
utilisation of (SMITH), (P.), B., 32.
of acids of the oxalic acid series (VERKADE, HARTMAN, and COOPS), A., 686.
of cyclic hydrocarbons (KONOVALOV), A., 668.
of dicarboxylic acids and their anhydrides (HARTMAN), A., 800.
of volatile substances (VERKADE and COOPS), A., 893.
- Heat of crystallisation** of isomeric aromatic compounds (ANDREWS, LYNN, and JOHNSTON), A., 668.
of monobasic fatty acids (GARNER, MADDEN, and RUSHBROOKE), A., 1087.
- Heat of dilution** of salts at low concentrations (NERNST and ORTHMANN), A., 579.
of solutions of ions (BJERRUM), A., 476.

- Heat of dissociation of non-polar molecules (BIRGE and SPONER), A., 993.
- Heat of formation, law of (COLLINS), A., 568.
- of hydrides (SIEVERTS and GOTTA), A., 340.
- of salts in relation to component atomic volumes (SOHÜTZ and EPHRAÏM), A., 1193.
- Heat of fusion of organic solvents (MITSUKURI), A., 568.
- latent, of metals (AWBERRY and GRIFFITHS), A., 1087.
- Heat of vaporisation at low temperatures and pressures (DONATH), A., 893.
- relation of the capillary constant to (DE KOLOSOVSKI), A., 1008.
- in relation to surface tension (HERZ), A., 1008.
- of ideal gases at absolute zero (DE KOLOSOVSKI), A., 1198.
- of liquids (MATHEWS), A., 462.
- and vapour pressure at low temperatures (VERSCHAFFELT), A., 894.
- latent, in relation to curvature and pressure and velocity of sound (SATTERLY), A., 785.
- relation between osmotic pressure and (SCHREBER), A., 579.
- internal latent, relation of, to molecular surface energy (VAN LAAR), A., 343.
- Heat storage vessels, filling bodies for (PFÄLZISCHE CHAMOTTE & THONWERKE and STRACK), (P.), B., 729.
- Heat treatment of chemical compounds (GOVERS), (P.), B., 650.
- of materials by electricity (BROWN and METROPOLITAN-VICKERS ELECTRICAL Co.), (P.), B., 953.
- by means of a bath of molten metal (DUCKHAM and THERMAL IND. & CHEM. RESEARCH Co.), (P.), B., 224*.
- Heaters, prevention of adhesion of scale in (SCHNETZER), (P.), B., 113.
- Heating, method and apparatus for (PUENING), (P.), B., 2.
- of materials to render workable (VAN METER), (P.), B., 440.
- at successively different temperatures (DUCKHAM, MORGAN, and THERMAL IND. & CHEM. RESEARCH Co.), (P.), B., 145*.
- to recover volatile constituents (HUME), (P.), B., 520.
- inductive (NORTHRUP), B., 283.
- Heating apparatus (TER MEULEN), A., 264; (GOVERS), (P.), B., 650; (CANO), (P.), B., 808; (KRAUSE), (P.), B., 935; (W. G. and F. R. SIMON), (P.), B., 907.
- Heavy spar, purification and bleaching of (EBERS), (P.), B., 742.
- in paints (VAN HOEK), B., 287.
- Hederagenin methyl ester, oxidation of (JACOBS and GUSTUS), A., 1250.
- Hedgehog, constituents of, during hibernation (WEINLAND), A., 87.
- Hedyphane from Franklin Furnace (FOSHAG and GAGE), A., 380.
- Helianthus annuus*, growth and nitrogen absorption in (RIPPET and LUDWIG), A., 1280.
- quercimeritrin from (SANDO), A., 982.
- Helicore australis*. See Dugong.
- Helio Fast Yellow RL, constitution of (ROWE, BURR, and CORBISHLEY), B., 310.
- Helium, origin of, in the earth (LIND), A., 143.
- in natural gases of Japan (KANO and YAMAGUTI), A., 933; (YAMAGUCHI and KANO), A., 1118.
- extraction of, from gases (BOTTOMS), (P.), B., 238.
- recovery of, from the air (GES. F. LINDE'S EISMASCHINEN), (P.), B., 322.
- occurrence of, in vacuum tubes (BALY and RIDING), A., 1191.
- preparation of luminescent discharge tubes of (RISLER), B., 636.
- atoms, models of (CRUDELI), A., 880.
- dynamics of (TRKAL), A., 451.
- nucleus, structure of (NAGAOKA), A., 1076.
- molecular structure of (MULLIKEN), A., 452.
- refractivity of, in a glow discharge (MCCURDY and BRAMLEY), A., 456.
- spectrum of (SLATER), A., 101; (BURGER), A., 985; (WALLER), A., 987.
- D₂-line in (MACNAIR and MCCURDY), A., 213.
- absorption and resonance spectra of (MCCURDY), A., 101, 549.
- arc spectrum of (PASCHEN), A., 765.
- spark spectrum of (KUNZE), A., 649.
- ultra-violet spark spectra of neon and (DORGELO and ARBINK), A., 766.
- spectra of the electric discharge in (TAKAMINE), A., 935.
- Stark effect for (FOSTER), A., 2, 330.
- Helium, low-voltage discharges in (MCCURDY and DALTON), A., 448.
- sparkling potentials of, between aluminium electrodes (VAN VOORHIS), A., 1072.
- resonance potentials and electron impacts in (GLOOKLER), A., 552.
- mobility of electrons in (WAHLIN), A., 653.
- scattering of electrons in (DYMOND), A., 989.
- path of protons in (DEMPSTER), A., 4, 450.
- scattering of protons in (THOMSON), A., 218.
- density and atomic weight of (BAXTER and STARKWEATHER), A., 233.
- diffusion of, through quartz glass (ELSEY), A., 895.
- liquid, experiments with (SIZOO and ONNES), A., 230, 564.
- resistance determinations by means of (MEISSNER), A., 1086.
- surface tension of (VAN URK, KEESOM, and ONNES), A., 568.
- solid (KEESOM), A., 893.
- isothermals of (VAN AGT and ONNES), A., 234; (HOLBORN and OTTO), A., 1000.
- at low temperatures (SCHIDLOF), A., 463.
- transformation of hydrogen into (PANETH and PETERS), A., 1077.
- intensity of lines of, in glow lamps (HEINRICH), A., 874.
- gas thermometry with (HEUSE), A., 786.
- for divers (GAERTNER), B., 319.
- Helium determination and separation:—
- determination of, in gas mixtures and minerals (CHLOPIN and LUKASUK), B., 51.
- separation of, from gas mixtures (PANETH and PETERS), (P.), B., 916.
- Helix aspersa* and *pomatia* (snail), mucoproteins of (LEVENE), A., 87.
- Hemicelluloses (O'DWYER), A., 983.
- s- and as-Hemimellithenols (v. AUWERS and WIENERS), A., 283.
- Hemlock, Western, tannin content of, after immersion in sea water (TEMPLETON and SHERRARD), B., 205.
- Hemp fibres, treatment of (DUBOIS), (P.), B., 122.
- mechanical treatment of (SHARP), (P.), B., 1010.
- retting of (AUSTERWEIL and PEUFAILLET), (P.), B., 739.
- Hens, eggs of. See Eggs.
- laying, analyses of faeces of, with and without calcium carbonate addition in diet (BUCKNER, MARTIN, and PETER), A., 1169.
- Hentriacontane, *on*-dibromo- (GRÜN, ULBRICH, and KREZIL), A., 596.
- Hentriacontan- π -ol (GRÜN, ULBRICH, and KREZIL), A., 596.
- Δ^0 -Hentriacontene (GRÜN, ULBRICH, and KREZIL), A., 596.
- π -Hentriacontyl esters (GRÜN, ULBRICH, and KREZIL), A., 597.
- Hepta-acetyl-d-galacto-d-arabinonitrile (ZEMPLÉN), A., 1229.
- Heptacosane, ν -dibromo- (GRÜN, ULBRICH, and KREZIL), A., 596.
- Heptacosan- ξ -ol (GRÜN, ULBRICH, and KREZIL), A., 596.
- Δ^0 -Heptacosene (GRÜN, ULBRICH, and KREZIL), A., 596.
- ξ -Heptacosyl esters (GRÜN, ULBRICH, and KREZIL), A., 597.
- cycloHeptadecane (RUZICKA, BRUGGER, PREIFFER, SCHINZ, and STOLL), A., 727.
- Heptadecane- α -dicarboxylic acid, esters (CHUIT), A., 500.
- n-Heptadecoylacetone, and its copper salt (MORGAN and HOLMES), A., 148.
- $\Delta\alpha$ -Heptadiene (BOUIS), A., 935.
- Heptaglucon, and its trimethyl derivative (IRVINE and OLDHAM), A., 153.
- n-Heptaldehyde δ -anilinosemicarbazone (BAIRD and WILSON), A., 1141.
- 2:4-dinitrophenylhydrazono (BRADY and ELSMIE), A., 394.
- Heptaldehyde, β -hydroxy- (PRILESCHAJEV), A., 383.
- β γ-2:4:6:3'-4'-Heptamethoxy- $\alpha\alpha$ -diphenylpropane (NIERENSTEIN), A., 954.
- Heptamethylturanoose (ZEMPLÉN and BRAUN), A., 1229.
- Heptane, δ -mono- and $\gamma\delta$ -di-bromo- and δ -mono- and $\gamma\delta$ -di-chloro- (MATHUS and GIBON), A., 272.
- Heptane- $\gamma\delta$ -diol (MATHUS and GIBON), A., 272.
- Heptane- $\beta\gamma$ -dione, semicarbazone of (VAN RYSSSELBERGER), A., 1238.
- Heptene oxide, α -chloro- (PRILESCHAJEV), A., 383.
- $\Delta\gamma$ -Heptene (MATHUS and GIBON), A., 272.
- $\Delta\alpha$ -Heptene, α -chloro-, oxidation of, by perbenzoic acid (PRILESCHAJEV), A., 383.
- $\Delta\alpha\beta$ -Heptenes, bromo-, isomeric, ultra-violet absorption spectra of (KIRRMANN and VOLKRINGER), A., 776.
- $\gamma\delta$ -Heptenechlorohydrins (MATHUS and GIBON), A., 272.
- Δ -Hepten- β -one (GRIGNARD and CHAMBRÉ), A., 268.

- Heptinene, α -bromo-, and α -iodo- (GRIGNARD and PERRICHON), A., 382.
- Heptic acid, thallos salt (WALTER), A., 712.
- n*-Heptyl ether (SENDERENS), A., 46.
- 2-*n*-Heptylamino-1:6:8-trinitronaphthalene (VAN DER KAM), A., 1240.
- 2-Heptylamino-1:2:3:4-tetrahydronaphthalene, 7-amino-, and its benzoyl derivative, and their salts (v. BRAUN, GOLL, and METZ), A., 1233.
- n*-Heptylaniline, 2:4-dinitro- (VAN DER KAM), A., 1240.
- cycloHeptylmethyl alcohol and bromide (v. BRAUN, KÜHN, and SIDDIQUI), A., 851.
- cycloHeptylmethylnorcodeine, and its picrate (v. BRAUN, KÜHN, and SIDDIQUI), A., 851.
- Herapathite (*quinine sulphatoperiodide*), preparation of (ZIMMERN), A., 744.
- deposition of, on vertical plates (ZIMMERN and COUTIN), A., 706.
- Herbiyora, mineral content of pasture grass and its effect on (ELLIOT, ORR, WOOD, CRICHTON, CRUIKSHANK, and GODDEN), B., 251.
- Hermidin, and its derivatives from *Mercurialis* (HAAS and HILL), A., 99, 1066.
- electrode potentials of (CANNAN), A., 1183.
- Herrings, rôle of proteolytic enzymes in the decomposition of (ALMY), B., 800.
- trimethylamine oxide in muscle of (POLLER and LINNEWEN), A., 857.
- Herring oil, composition of (TSUJIMOTO), B., 758.
- Heterocyclic compounds (SINGAR and DE), A., 416; (GUHA and DEY), A., 417.
- comparison of, with benzene (FIESER), A., 625.
- colour reactions of aldehydes with (LIEBEN and POPPER), A., 959.
- kinetics of conversion of halogenalkylamines into (FREUNDLICH and KROEPELIN), A., 1010.
- containing quinquivalent bromine or iodine (HUGEL), A., 183.
- Heterolysulosan, and its salts (PICTET and CHAVAN), A., 1126.
- Houländites, volume of, and the change on dehydration (BILTZ and SPECHT), A., 110.
- Heusler's alloys, specific heat of (SUOKSMITH and POTTER), A., 893.
- See also Copper alloys with manganese.
- Hevea. See Rubber trees.
- Hexa-acetato-dihydroxytriferic salts, monochloro- and hexacyano- (WEINLAND and LOEBICH), A., 499.
- Hexachlororuthenates. See under Ruthenium.
- Hexacosic acid, from arachis oil (HOLDE and GODBOLE), A., 268.
- Hexadecane, α -*di*bromo- (CHUIT), A., 500.
- Hexadecane- α -carboxylic acid, π -amino- (RUZICKA), A., 615.
- Hexadecane- α -dicarboxylic acid, esters (CHUIT), A., 500.
- Hexadecane- α -diol, and its diacetyl derivative (CHUIT), A., 500.
- cycloHexadecanone, and its semicarbazone (RUZICKA, STOLL, and SCHINZ), A., 615.
- n*-Hexadecylacetone, and its copper salt (MORGAN and HOLMES), A., 148.
- Δ^4 -Hexadiene (BOUIS), A., 935.
- Δ^4 - and Δ^8 -Hexadienes, bromides of (DUMOULIN), A., 710.
- Δ^4 -Hexadi-inene (PRÉVOST), A., 496.
- Hexaformatopyridinetriferic salts, hydroxy- (WEINLAND and ENGEL), A., 498.
- Hexaformatothoric acid, salts (WEINLAND and STARK), A., 498.
- Hexaglycollato-dihydroxytriferic sodium perchlorate (WEINLAND and LOEBICH), A., 499.
- Hexahexosan (CASTAN and PICTET), A., 52.
- Hexahydroacenaphthene (SKITA), A., 174.
- 1:2:3:4:5:8-Hexahydroanthraquinol, and its diacetates (SKITA), A., 174.
- 1:2:3:4:5:8-Hexahydroanthraquinone, and its dibromide (SKITA), A., 174.
- Hexahydroazulene (RUZICKA and RUDOLPH), A., 299.
- Hexahydrobenzaldehyde, action of ultra-violet light on (FRANKE and SIGMUND), A., 202.
- Hexahydrobenzanthracene (v. BRAUN and REUTER), A., 1139.
- Hexahydrobenzoic acid, thallos salt (WALTER), A., 712.
- o*-Hexahydrobenzylcyclohexanol, and its phenylurethane (v. BRAUN and BAYER), A., 1253.
- o*-Hexahydrobenzylcyclohexanone, and its semicarbazone (v. BRAUN and BAYER), A., 1253.
- Hexahydrobenzylideneacetone, and its semicarbazones (KON and SMITH), A., 952.
- Hexahydrodianhydrostrophanthidin (WINDAUS, REVEREY, and SCHWIEGER), A., 73.
- Hexahydroindoxyllic acid, esters of (VORLÄNDER and KLAOE), A., 1140.
- Hexahydromethylacetophenones. See Hexahydrotolyl methyl ketones.
- Hexahydrophenylglycine-*o*-carboxylic acid, and its salts and derivatives (VORLÄNDER and KLAOE), A., 1139.
- Hexahydrotolyl methyl ketones, refraction and density measurements of (VAN WOERDEN), A., 293.
- Hexahydroxanthene (v. BRAUN and BAYER), A., 1253.
- Hexahydroxydodecamminetetracobaltic molybdate. See under Cobalt bases.
- n*-Hexaldehyde 2:4-dinitrophenylhydrazine (BRADY and ELSMIE), A., 394.
- 3:4:5:3':4':5'-Hexamethoxydibenzoylhydrazine (KALB and GROSS), A., 614.
- Hexamethylamylobiose, and its acetyl derivative (PRINGSHEIM and STEINGROEVE), A., 715.
- Hexamethylbenzene, preparation of (SMITH and DOBROVOLNY), A., 719.
- 1:2:6:1':2':6'-Hexamethyl-4:4'-diisobutyltetrahydrodipyridyl-3:5:3':5'-tetracarboxylic acid, ethyl ester (MUMM and LUDWIG), A., 961.
- 1:2:6:1':2':6'-Hexamethyl-4:4'-diethyltetrahydrodipyridyl-3:5:3':5'-tetracarboxylic acid, ethyl ester (MUMM and LUDWIG), A., 961.
- Hexamethylenetetramine (*hexamethylenamine*; *urotropine*), manufacture of (WADE and KARPEN & BROS.), (P.), B., 646*.
- manufacture and purification of (CARTER and KARPEN & BROS.), (P.), B., 217.
- production and separation of ammonium chloride and (KARPEN & BROS.), (P.), B., 514*.
- cobalt, magnesium, manganese, and nickel molybdates (DI CAPUA), A., 304.
- dinitrate (HALE), A., 53.
- compounds of, with tin and titanium halides (SCAGLIARINI and BRASI), A., 310; (SCAGLIARINI and MONTE), A., 1113.
- compound of, with uranium (ISNARD), A., 1158.
- mixtures of, as pharmaceutical products (A. G. FÜR ANILIN-FABR.), (P.), B., 771.
- Hexamethylmethyl-*d*-gluco-*d*-arabino- (ZEMPLÉN and BRAUN), A., 1230.
- Hexamethylspermine (DUDLEY, ROSENHEIM, and STARLING), A., 1128.
- n*-Hexane, dried, vapour pressure of (SMITS, DE LIEFDE, SWART, and CLAASSEN), A., 1206.
- Hexane, tribromo- (VAN RISSEGHEM), A., 1224.
- bromiodo-, preparation of (HOLDE and GORGAS), B., 836.
- cycloHexane, action of benzoyl peroxide on (GELISSEN and HERMAN), A., 612.
- cycloHexanes, 1:1-disubstituted, structure of (WIGHTMAN), A., 1238.
- cycloHexano series, stereoisomerism in (GODCHOT and BEDOS), A., 164, 280, 395; (BEDOS), A., 508, 608, 729.
- cycloHexane-1-acetic-1-propionic acid, and its ethyl ester (NORRIS), A., 388.
- cycloHexane-1-acetone-1-acetic acid, and its semicarbazone (NORRIS), A., 388.
- cycloHexanespiro-3-bromo- Δ^2 -cyclopenten-2-ol-4-one (ROTHSTEIN and THORPE), A., 1039.
- cycloHexane-1'-carboxylic acid 1-hydrazide (WIGHTMAN), A., 1238.
- cycloHexane-1-carboxylic-1-malonic acid, and its derivatives (HELPER), A., 1151.
- cycloHexanespiro-3:5-dichloro- Δ^2 -cyclohexadiene (NORRIS), A., 389.
- cycloHexanespiro-5-chloro- Δ^4 -cyclohexen-3-one, and its semicarbazone (NORRIS), A., 388.
- cycloHexanediacetic acid, condensation of, with ethyl oxalate (ROTHSTEIN and THORPE), A., 1038.
- cycloHexane-1:1'-dicarboxylic acid, esters of (WIGHTMAN), A., 1238.
- cycloHexane-1:2-diol bromohydrin, and its phenylurethane (BEDOS), A., 508.
- cycloHexan-1:3-diol, 2-chloro-, and its diacetate (KÖRTZ and RICHTER), A., 281.
- o*-cycloHexanediols, stereochemistry of (BEDOS), A., 1238.
- cycloHexanespirocyclohexan-3:5-dione, reactions of (NORRIS), A., 388.
- cycloHexanespirocyclohexane (NORRIS), A., 388.
- cycloHexanespirocyclohexan-3-ol, and its *p*-nitrobenzoate (NORRIS), A., 388.

- cycloHexanespirocyclohexan-3-one*, and its derivatives (NORRIS), A., 388.
- cycloHexanespirocyclopentane-2:4-dione* (ROTHSTEIN and THORPE), A., 1030.
- 5-cycloHexanespiro-0:1:2-dicyclopentene-1:3-diol*, 4-nitro- and 4-nitroso- (HASSELL and INGOLD), A., 953.
- 5-cycloHexanespirocyclopenten-3-ol*, 1:4-dioximino- (HASSELL and INGOLD), A., 954.
- 5-cycloHexanespirocyclopenten-3-ol-1-one*, 4-oximino- (HASSELL and INGOLD), A., 953.
- n-Hexene- $\alpha\beta$ -tricarboxylic acid*, ethyl ester (SCHEIBLER and RETTIG), A., 843.
- cycloHexanol*, freezing points of dilute solutions of electrolytes in (SOHNREINER and FRIVOLD), A., 1208.
- naphthylurethane* from (BICKEL and FRENCH), A., 517.
- resin from formaldehyde and (ELLIS and ELLIS-FOSTER Co.), (P.), B., 68.
- cycloHexanols*, esterification of (CAUQUIL), A., 914.
- cycloHexan-2-ol-1-one*, and its phenylhydrazone (BERGMANN and GIERTH), A., 728.
- cycloHexan-3-ol-1-one*, 2-chloro- (KÖTZ and RICHTER), A., 281.
- Hexan- β -one*, 8-hydroxy- (PASTUREAU and ZAMENHOF), A., 272.
- cycloHexanone*, mercury compound of (NEUMANN), (P.), B., 965.
- compounds of, with benzaldehyde (VORLÄNDER and KUNZE), A., 1144.
- carboxyphenylhydrazones of (COLLAR and PLANT), A., 735.
- nitrophenylsemicarbazone (WHEELER and WALKER), A., 62.
- cycloHexanone*, 1-hydroxy-, acetyl and benzoyl derivatives, and their derivatives (BERGMANN and GIERTH), A., 728.
- cycloHexan-1:2:3-triol*, and its derivatives (KÖTZ and RICHTER), A., 281.
- cycloHexene*, cyano- (RUZIKA and BRUGGER), A., 727.
- cycloHexene oxide*, reactions of (BEDOS), A., 1238.
- action of magnesium phenyl bromide on (BEDOS), A., 508.
- Δ^1 -cycloHexene oxide*, 1-hydroxy- (BERGMANN and GIERTH), A., 728.
- $\Delta\alpha$ - and $\Delta\beta$ -Hexenes* (VAN RISSEGHEM), A., 1224.
- Δ^1 -cycloHexene-1-carboxylic acid*, ethyl ester (HELPER), A., 1151.
- $\Delta\alpha$ -Hexenoic acid* (BOURQUEL and YVON), A., 269.
- $\Delta\beta$ -Hexen-8-ol*, catalytic dehydration of (PRÉVOST), A., 1224.
- Δ^8 -Hexen- β -ol* (DELABY and MOREL), A., 498.
- Δ^2 -cycloHexonol*, and its acetate and benzoate (KÖTZ and RICHTER), A., 280.
- Δ^7 -Hexen- β -one*, preparation of, and its derivatives (PASTUREAU and ZAMENHOF), A., 272, 1227.
- Δ^2 -cycloHexenone*, 2-chloro- (KÖTZ and RICHTER), A., 281.
- cycloHexenones*, phenylsemicarbazones of (MACUREVITSCH), A., 170.
- semicarbazidesemicarbazones and thiosemicarbazones of (MACUREVITSCH), A., 169.
- α - Δ^1 -cycloHexenylacetophenone*, and its derivatives (FARROW and KON), A., 1040.
- Δ^1 -cycloHexenylmalonic acid*, and its ethyl ester (KON and SPEIGHT), A., 1247.
- α - Δ^1 -cycloHexenylmethyl ethyl ketone*, and its semicarbazone (KON and SMITH), A., 952.
- Δ^1 -cycloHexenyl- α -methylmalonic acid*, and its ethyl ester (KON and SPEIGHT), A., 1247.
- Hexoic acid*, thallous salt (WALTER), A., 712.
- Hexoses*, function of phosphates in the dissimilation of (LEBEDEV), A., 1227.
- Hexosediphosphatase* of muscle and liver (BRUGSCH, CAHEN, and HORSTERS), A., 197.
- Hexosediphosphoric acid*, fermentation of (NEUBERG and KOBEL), A., 322, 1061.
- hydrolysis of, in the organism (FÜRTH and MARIAN), A., 428.
- toxicity of (ABELES), A., 200.
- salts of (NEUBERG and SABETAY), A., 152.
- Hexosephosphoric acid*, hydrolysis of, by bone extracts (FUJIHARA and KOKEN), A., 1176.
- in blood (LAWACZEK), A., 752.
- Hexosephosphoric acids*, esters, in calcification (ROBISON), A., 638; (MARTLAND and ROBISON), A., 968.
- isoHexoyl- γ -aminobutyric acid*, α -bromo- (ABDERHALDEN, PIEPER, and TATEYAMA), A., 545.
- isoHexoylarsanilic acid*, α -bromo- (GIEMSA and TROPP), A., 1162.
- n-Hexoylbromethanol* (ABDERHALDEN, PAFFRATH, and SICKEL), A., 97.
- isoHexoyl-2:5-diketeto-3-isobutylpiperazine*, 1- α -amino- (ABDERHALDEN and SCHWAB), A., 1260.
- isoHexoyl-d-glutamic acid*, *dl*-bromo-, esters of (ABDERHALDEN and ROSSNER), A., 603.
- Hexoylresorcinol* (2:4-dihydroxyphenyl *n*-amyl ketone), and its derivatives (TWISS), A., 1041.
- Hexoylresorcinols* (DOHME, COX, and MILLER), A., 838.
- cycloHexyl esters*, 2-chloro- (KÖTZ and MERKEL), A., 721.
- halides and esters, 2-bromo-, and 2-chloro- (BEDOS), A., 1238.
- β -cycloHexylacetylene*, α -bromo- and α -iodo- (GRIGNARD and PERRICHON), A., 382.
- 1-cycloHexylaminocyclohexane*, 1-cyano- and 1-cyano-2'-hydroxy-, and their derivatives (KÖTZ and MERKEL), A., 721.
- 2-Hexylamino-1:2:3:4-tetrahydronaphthalene*, ζ -amino-, and its benzoyl derivative, and their salts (v. BRAUN, GOLL, and METZ), A., 1233.
- cycloHexylamyl alcohol* and bromide (HIERS and ADAMS), A., 1136.
- ϵ -cycloHexylamylmalonic acid*, and its diethyl ester (HIERS and ADAMS), A., 1137.
- n-Hexylbenzene*, 2:4-dihydroxy-. See *Hexylresorcinol*.
- α -cycloHexylbutan- γ -one*, α -hydroxy-, and its semicarbazone (KON and SMITH), A., 952.
- cycloHexylbutyl alcohol* and bromide (HIERS and ADAMS), A., 1136.
- 8-cycloHexylbutylmalonic acid*, and its diethyl ester (HIERS and ADAMS), A., 1137.
- γ -cycloHexylbutyric acid* (HIERS and ADAMS), A., 1137.
- ϵ -cycloHexyldecoic acid*, and ϵ -hydroxy-, and its methyl ester (HIERS and ADAMS), A., 1137.
- 1-cycloHexyl-3:5-diketocyclohexane* (KON and SMITH), A., 953.
- 1-cycloHexyl-3:5-diketocyclohexane-6-carboxylic acid*, ethyl ester (KON and SMITH), A., 953.
- λ -cycloHexyldodecoic acid*, and 1-hydroxy-, and its methyl ester (HIERS and ADAMS), A., 1137.
- cycloHexylethyl alcohol* and bromide (HIERS and ADAMS), A., 597, 1137.
- cycloHexylethylene*, dibromiodo- (GRIGNARD and PERRICHON), A., 382.
- cycloHexylethylmalonic acid*, and its diethyl ester (HIERS and ADAMS), A., 1137.
- cycloHexylglycerol*, and its triacetate (DELABY and JANOT), A., 165.
- ζ -cycloHexylheptoic acid* (HIERS and ADAMS), A., 1137.
- cycloHexylcyclohexanol* (IPATIEV and ORLOV), A., 59.
- 2-cycloHexylcyclohexanols*, and their derivatives (BEDOS), A., 608.
- steric hindrance in, and their salts and derivatives (VAVON, ANZIANI, and HERYNYK), A., 1033.
- 2-cycloHexylcyclohexanone semicarbazone* (BEDOS), A., 608.
- ϵ -cycloHexylhexoic acid* (HIERS and ADAMS), A., 1137.
- cycloHexylhexyl alcohol* and bromide (HIERS and ADAMS), A., 1136.
- ζ -cycloHexylhexylmalonic acid*, and its diethyl ester (HIERS and ADAMS), A., 1137.
- cycloHexylhydrobenzoin*, and its acetate (DANILOV and VENUS-DANILOVA), A., 520.
- α -cycloHexylidenbutan- γ -one*, and its semicarbazone (KON and SMITH), A., 952.
- α -cycloHexylidenbutyronitrile* (FARROW and KON), A., 1040.
- cycloHexylidenecyclohexanone*, and its derivatives (KUNZE), A., 1143.
- cycloHexylmethyl alcohol* and bromide (HIERS and ADAMS), A., 1136.
- cycloHexylmethylcarbinol*, resolution of, and its salts (DOMLEO and KENYON), A., 948.
- cycloHexylmethyl ketone*, bromo-, and its semicarbazone (GRIGNARD and PERRICHON), A., 382.
- cycloHexylmethylnorcodeine*, and its salts (v. BRAUN, KÜHN, and SIDDIQUI), A., 851.
- 1-cycloHexyl-3-methylcyclopentane* (ZELINSKI and TITZ), A., 278.
- 1-cycloHexyl-3-methylcyclopentan-1-ol* (ZELINSKI and TITZ), A., 278.
- 8-cycloHexylnonoic acid*, and θ -hydroxy-, and its methyl ester (HIERS and ADAMS), A., 1137.
- η -cycloHexyloctoic acid* (HIERS and ADAMS), A., 1137.
- cycloHexylcyclopentane* (ZELINSKI and TITZ), A., 278.
- cycloHexylcyclopentanol* (ZELINSKI and TITZ), A., 278.
- cycloHexylphenylmethylarsine*, and its benzobromide (ROBERTS, TURNER, and BURY), A., 852.
- n-Hexylphloroglucinol* (KLARMANN and FIGDOR), A., 516.
- cycloHexylpropinenitrile*, and its amide (GRIGNARD and PERRICHON), A., 382.
- cycloHexylpropyl alcohol* and bromide (HIERS and ADAMS), A., 1137.
- γ -cycloHexylpropylmalonic acid*, and its diethyl ester (HIERS and ADAMS), A., 1137.

- Hexylresorcinol**, and its derivatives (TWISS), A., 1041.
and its homologues, use of, as internal antiseptics (LEONARD), B., 298.
stability of, in pharmaceutical preparations (FEIRER and LEONARD), B., 963.
- Hexylresorcinols** (DOHME, COX, and MILLER), A., 838.
- cycloHexylsulphonic acid**, aniline salt (GILMAN and MORRIS), A., 1132.
- μ -**cycloHexyltridecoic acid**, and μ -hydroxy-, methyl ester (HIERS and ADAMS), A., 597, 1137.
- κ -**cycloHexylundecic acid**, and θ -hydroxy-, methyl ester (HIERS and ADAMS), A., 597, 1137.
- δ -**cycloHexylvaleric acid** (HIERS and ADAMS), A., 1137.
- cycloHexylvinylcarbinol**, and its derivatives (DELABY and JANOT), A., 165.
- cycloHexylxanthrydrol** (CONANT and SMALL), A., 158.
- n-Hexylxanthryl perchlorate** (CONANT and SMALL), A., 158.
- cycloHexylxanthryl perchlorate** and **peroxide** (CONANT and SMALL), A., 158.
- Hibiscus floccosus**. See *Terap.*
- Hibiscus macrophyllus**. See *Baru.*
- Hides**, alkaline hydrolysis of (AGENO-VALLA and BORNATE), B., 715.
swelling and adsorption of acids by (PAVLOV), B., 958.
treatment of (LE PETIT and BURNS), (P.), B., 558*; (LE PETIT), (P.), B., 1022.
prior to tanning (HELL), (P.), B., 830.
depilation of (BERGMANN), (P.), B., 377; (ULLMAN and BENFEX), (P.), B., 505.
depilating and bathing of (KRALL and LENGRAND, KRALL & CIE.), (P.), B., 23.
removal of hair from (ROSS, MARRIS, and WALKER & SONS), (P.), B., 23.
behaviour of sharpened limes in unhairing of (KAYE and MARRIOTT), B., 249.
liming of, with sulphides (CASABURI), B., 957.
characterisation of (GANSER), (P.), B., 891.
mode of combination of chromium with proteins of (THOMAS and KELLY), B., 599.
combining power of vegetable tanning agents with proteins of (SOHAPARELLI and AVENATI-BASSI), B., 716.
animal, tanning of (STINNES-RIEBECK-MONTAN & OELWERKE), (P.), B., 761.
dried, soaking liquor for (LLOYD, PICKARD, and BRITISH LEATHER MANUFACTURERS RES. ASSOC.), (P.), B., 558*.
green, unhairing of (BERGMANN and IMMENDÖRFER), (P.), B., 1022.
heavy, deliming of (BAGGINI and CHIEZA), B., 69.
- Hide powder**, action of ultra-violet light on (THOMAS and FOSTER), B., 69.
adsorption and swelling of (KUBELKA and TAUSSIG), A., 900.
influence of drying on water resistance of (GERNGROSS and GORGES), B., 957.
for tannin analysis, preparation of (MEUNIER, CHAMBAR, and JAMET), B., 167.
salt-treated, action of, with tanning agents (GUSTAVSON), B., 839.
tests with, using a buffer solution of pH 4.6 (PARKER and TERRELL), B., 69.
determination of the isoelectric point of, by means of complex chromium salts (GUSTAVSON), B., 798.
- Hide substance**, effect of neutral salts on (THOMAS and FOSTER), B., 23; (GUSTAVSON), B., 503.
fixation of chromium compounds by (GUSTAVSON and WIDEN), B., 566.
- Hippuric acid**, synthesis of, in the body (BIGNAMI), A., 90.
in the organism, and its determination (GRIFFITH), A., 972.
hydrolysis and excretion of, in the animal organism (GRIFFITH and CAPPEL), A., 429.
determination of (QUICK), A., 539.
- Hippuric acid**, *p*-amino- (MUENZEN, CERECEDO, and SHERWIN), A., 539.
bromo-, chloro-, and iodo-, and their derivatives (NOVELLO, MIRIAM, and SHERWIN), A., 638.
thio-, and its ethyl ester, toxicity of (SUPNIEWSKI), A., 1173.
- Histamine** (4- β -aminoethylglyoxaline), microchemical identification of (VAN ITALLIE and STEENHAVER), A., 182.
from ergot (FORST and WESE), A., 1281.
effect of, on acid-base balance and protein katabolism (HILLER), A., 974.
action of, on chlorides in blood (DRAKE and TISDALL), A., 430.
- Histamine shock**, changes in blood and tissues in (CHAMBERS and THOMPSON), A., 318.
- Histidine**, replacement of, in diet (COX and ROSE), A., 973.
metabolism of. See under *Metabolism*.
interchangeability of arginine and, in metabolism (ROSE and COX), A., 754.
determination of (KOSSEL and STAUDT), A., 967.
determination of, in proteins (HANKS), A., 633.
separation of arginine and (VICKERY and LEAVENWORTH), A., 854.
- Histidine anhydride**, physiological action of (HOSODA), A., 430.
- Histidylhistidine**, methyl ester, physiological action of (HOSODA), A., 430.
- Hogs**, nutritive value of protein in various tissues of (HOAGLAND and SNIDER), B., 846.
brains and tongues of, nutritive value of proteins in (HOAGLAND and SNIDER), B., 846.
- Holoquinonic compounds**, colour of salts of (PICOARD), A., 1133.
- Homarus vulgaris** (lobster), oxygen dissociation curve of hæmoglobin from (STEDMAN and STEDMAN), A., 1164.
- Homocatechol**, derivatives of (GRAESSER-THOMAS, GULLAND, and ROBINSON; GULLAND and ROBINSON), A., 1035.
- Homocatechol**, 2:6-dinitro- (GRAESSER-THOMAS, GULLAND, and ROBINSON), A., 1035.
- Homochaulmoogric acid**, and its nitrile (SACKS and ADAMS), A., 1137.
- β -**Homochelidonine** (α -allocryptopine), formation of, from berberine (HAWORTH and PERKIN), A., 417.
- Homohydrocarpic acid** (SACKS and ADAMS), A., 1137.
- s-Homotetrahydroisoquinoline**, and its salts and derivatives (v. BRAUN and REICH), A., 178.
- Homopiperonylresacetophenone**, 6'-bromo- (BAKER), A., 732.
- Homoveratrole**, 6-bromo-2-nitro-, and 2:6-dinitro-, derivatives of (GULLAND and ROBINSON), A., 1035.
nitro- and nitroamino-derivatives (OBERLIN), A., 283.
2-nitro- (MERCK and OBERLIN), (P.), B., 28.
6-nitro-, preparation of (MERCK and OBERLIN), (P.), B., 852.
- Homoveratrole-6-sulphonyl chloride**, 5-nitro- (GULLAND and ROBINSON), A., 1035.
- 3-Homoveratryl-7-methoxychroman** (PERKIN, RAY, and ROBINSON), A., 733.
- Honey**, composition of the "frothy layer" in (FIEBE), B., 1027.
analysis of (LUCIUS), B., 844.
- Honey-bees**, blood of larva of (BISHOP, BRIGGS, and RONZONI), A., 191.
- Hops**, drying of (ELKINGTON), (P.), B., 211, 1025.
experimental drying and kilning of (BURGESS), B., 103.
resin acids of (WIELAND and MARTZ), A., 1249.
manuring of (BURGESS), B., 102.
evaluation of (FORD and TAIT), B., 170; (WINDISCH, KOLBACH, and BANHOLZER), B., 417.
titration of bitter substances of (HEINTZ), B., 171.
production of extracts of (ELEKTRO-OSMOSE A.-G., KOLBACH, WINDISCH, and DIETRICH), (P.), B., 26.
- Hop mildew**, fungicidal properties of spray fluids for (GOODWIN, MARTIN, and SALMON), B., 506.
- Hordenine**, carbamido-derivatives of (STEDMAN), A., 975.
- Horn**, solubility of, in alkali sulphides (WEISS), A., 749; (PULEVKA), A., 853.
artificial, manufacture of (SCHMIDT), (P.), B., 456.
from proteins or albuminous substances (SCHMIDT), (P.), B., 799.
treatment of blood for use in (STERNBERG), (P.), B., 335.
from casein, manufacture of shaped articles from (INT. GALALITH-GES. HOFF & Co.), (P.), B., 1022.
substances, plastic, production of, from albuminous materials (DEUTSCHE KUNSTHORN-GES.), (P.), B., 840.
- Hornbeam**. See *Carpinus betulus*.
- Hornblende** from Lower Austria (MARCHET), A., 266.
- Horses** fed on bran, mineral metabolism of (BANG), A., 1056.
- "**Hotam-ika**" oil (TSUJIMOTO), B., 636.
- Household refuse**. See under *Refuse*.
- Humic acid**, adsorption by (KAWAMURA), A., 1201.
colloid chemistry of (OSTWALD and STEINER), B., 34.
- Humic acids**, decomposition of, at 100° (ELLER and SCHÖFFACH), B., 257.
- Humidity**, measurement of, in closed spaces (GRIFFITHS), B., 79.
measurement of relative (A.-G. F. ANLIN-FABR.), (P.), B., 34.
effects of, on fabrics, and its control during strength tests (PARKER and JACKMAN), B., 530.

- Humidity, atmospheric, regulation of, in industrial textile processes (OBERMILLER), B., 312.
- Humulone, resinification of, by molecular oxygen (WINDISCH, KOLBACH, and YOFÉ), B., 928.
- Humus, formation of, in soils (WAKSMAN), B., 990.
in dead surface layers of forest soils (NEMEC), B., 335.
from conifer residues (GROSSKOPF), B., 930.
compounds in deteriorated fabrics and bearing of their formation on origin of peat and coal (THAYSEN, BAKES, and BUNKER), B., 305.
origin and determination of, in soils (WAKSMAN), B., 958.
- Hydantoin, 5-amino-, acetyl derivative (BILTZ and HANISCH), A., 414.
- Hydantoins, preparation of (BILTZ and SLOTTA), A., 1045.
isomerism of, induced by hydrogen chloride (HAHN and GILMAN), A., 181.
- Hydantoylanilide, 5-hydroxy- (BILTZ and LACHMANN), A., 1046.
- Hydantoylthylamide, 5-hydroxy- (BILTZ and LACHMANN), A., 1046.
- Hydantoylmethylamide, 5-hydroxy-, derivatives of (BILTZ and LACHMANN), A., 1046.
- Hydnocarpic acid, structure of (SHRINER and ADAMS), A., 47.
- Hydnocarpus, oils from species of (ANDRÉ), B., 98.
- Hydnocarpyl alcohol and bromide (SACKS and ADAMS), A., 1137.
- Hydrargyrum oxycyanatum, determination of mercury oxycyanide in, acidimetrically (RUPP), B., 384.
- Hydrargyrum salicylium, constitution of (RUPP and GERSCH), A., 534.
- Hydrastine metho-*p*-toluenesulphonate (RODIONOV), A., 533.
- Hydrates (WILLSTÄTTER, KBAUT, and ERBACHER), A., 34, 35;
(WILLSTÄTTER, KRAUT, and LOBINGER), A., 36.
nature of (REMY and REISNER), A., 1201.
problem of formation of (REMY), A., 128.
and hydrogels (ZSIGMONDY), A., 473.
crystalline. See Crystal hydrates.
- Hydration of strong electrolytes (SUGDEN), A., 244.
in solutions (HEITLER), A., 1006.
- Hydrazides, primary acid, oxidation of (KALB and GROSS), A., 614.
- Hydrazine, oxidation of (KONRAD and PELLEN), A., 370.
reaction of, with 1:4-diketo-compounds (KORSCHUN and ROLL), A., 961, 1154.
action of, on fats and fatty acids (VAN ALPHEN), A., 46.
action of, on nitro- and chloronitro-derivatives of benzene and naphthalene (MÜLLER; MÜLLER and ZIMMERMANN; MÜLLER and HOFFMANN; MÜLLER and WEISBROD), A., 163.
hydrate, action of, on phenanthraquinone (DUTT), A., 174.
sulphate, standardisation of iodine with (CATTELAINE), A., 489.
- Hydrazines, action of, on semicarbazones (BAIRD and WILSON), A., 1141.
- Hydrazinecarboxylic acid, propyl ester, hydrochloride and benzylidene derivative (BACKER and MEYER), A., 305.
- Hydrazine-*s*-dicarboxylic acid, *n*-butyl ester (DOX), A., 963.
- Hydrazinedicarboxymethylamide (COOPER and INGOLD), A., 1028.
- Hydrazinedisulphonic acid, metallic and pyridine salts of (KONRAD and PELLEN), A., 370.
- ω -Hydrazinobenzaldehyde-2:4-dibromophenylhydrazone, and its derivatives (CHATTAWAY and PARKES), A., 308.
- p*-Hydrazinobenzoic acid, ethyl ester, acetyl derivative (HELLER), A., 286.
- Hydrazinohomoveratrole, nitro-, and its piperonylidene derivative (GULLAND and ROBINSON), A., 1035.
- β -3-Hydrazinophenylhydroxylamine, 4:6-dinitro- (BORSCHÉ and FESKE), A., 606.
- 4-Hydrazinopyridine-2:6-dicarboxylic acid, and its salts and benzylidene derivative (KOENIGS, WEISS, and ZSOHARN), A., 413.
- Hydrazobenzaldehyde-2:4-dibromophenylhydrazone (CHATTAWAY and PARKES), A., 309.
- Hydrazobenzene, *oo'*-nitroamino- (GUHA and DE), A., 743.
- Hydrazoisobutane, and its oxalate (TAIPALE), A., 157.
- α -Hydrazochloroformazyl, amino-, and its hydrochloride (BAMBERGER, PADOVA, and ORMEROD), A., 416.
- Hydrazoic acid. See Azoimide.
- Hydrazomethanesulphonic acid, potassium salts (RASCHIG and PRAHL), A., 940.
- Hydrides, preparation of (TIEDE), (P.), B., 53.
ultra-violet absorption spectra of (HULTHÉN and ZUMSTEIN), A., 882.
heat of formation and density of (SIEVERTS and GOTTA), A., 340.
- Hydrides, volatile (PANETH and RABINOVITSCH), A., 34.
- Hydrindene (BORSCHÉ and BODENSTEIN), A., 1133.
- Hydrindenes, amino-, bromo-, dibromo-, bromoamino-, bromonitro-, nitro-, and nitroamino-, and their derivatives (BORSCHÉ and BODENSTEIN), A., 1133.
1-bromo- and 1-iodo- (COURTOT and DONDELINGER), A., 59.
- 4'-Hydrindeneazo- β -naphthol (BORSCHÉ and BODENSTEIN), A., 1133.
- 1-Hydrindone, preparation of (COURTOY and KROLIKOWSKI), A., 203.
- Hydrindones, action of phenylhydrazine on (LEUCHS and KOWALSKI), A., 293.
- β -1-Hydrindylthyl bromide (v. BRAUN and REUTTER), A., 1139.
- β -1-Hydrindylpropionic acid, and its derivatives (v. BRAUN and REUTTER), A., 1139.
- Hydroaromatic compounds, mercury derivatives (NEUMANN), (P.), B., 965.
- Hydrobenzoin transformation (ORÉKHOV and TIFFENEAU), A., 172.
- Hydrobromic acid. See under Bromine.
- Hydrocarbon, C_8H_{12} , from action of zinc dust on β -dimethyl- Δ^4 -hexinene- β -diol dibromide (KRESTINSKY), A., 1121.
- $C_{11}H_{10}$, from dehydrogenation of cyclohexylcyclopentane (ZELINSKI and TRTZ), A., 278.
- $C_{14}H_{10}$, and its picrate, from distillation of cholesterol (FISCHER and TREIBS), A., 399.
- $C_{15}H_{12}$, and its picrate, from distillation of cholesterol (FISCHER and TREIBS), A., 399.
- $C_{18}H_{14}$, and its dibromide, from distillation of cholesterol (FISCHER and TREIBS), A., 399.
- $C_{23}H_{38}$ from heating 7-ketocholanic acid (WIELAND, SCHLICHTING, and WIEDERSHEIM), A., 401.
- $C_{28}H_{44}$, from bark of plane tree (ZELLNER), A., 646.
- Hydrocarbons, synthesis of, by Kolbe's method (ERLENMEYER), A., 46; (FICHTER and HUMPERT), A., 925.
catalytic formation of, from fatty acids (STADNIKOV and IVANOVSKI), A., 1110.
adsorbent catalyst for production of (PÉTROLE SYNTHÉTIQUE), (P.), B., 147.
manufacture of cyanides and (CLANCY), (P.), B., 486.
from α -dibromopropylene and magnesium organic compounds (KIRRMANN), A., 817.
from paraffin wax (PIPER, BROWN, and DYMENT), A., 43.
apparatus for production of, from phenols (FISCHER), (P.), B., 865.
production of, from sulphite-cellulose waste lye (A. G. F. ZELLSTOFF- & PAPIER-FABR. and STEINSHNEIDER), (P.), B., 580.
from low-temperature tar phenols (OBERSCHLESISCHE KOKSWERKE & CHEM. FABR. and SUPAN), (P.), B., 576.
conversion of fatty acids into (STADNIKOV and IVANOVSKI), B., 306.
condensation of, under influence of α -particles (LIND and BARDWELL), A., 1077.
incipient ionisation of hydrogen atoms in (HOLMES and INGOLD), A., 829.
condensation of vapours of (ISOM, BELL, and SINCLAIR REFINING Co.), (P.), B., 6, 352.
apparatus for (ISOM, BELL, and SINCLAIR REFINING Co.), (P.), B., 397.
separation of condensable vapours of, from gases (SWAN), (P.), B., 182.
dehydration of (CROSS), (P.), B., 733.
influence of alkyl halides on inflammability of air and (NAGAI), A., 1106.
treatment of (CROSS; CHERRY and C. & C. DEVELOPING Co.), (P.), B., 700; (McCONNELL), (P.), B., 701.
apparatus for (NIECE and INTERNAT. HOLDING Co.), (P.), B., 121*.
with light of short wave-length (GOLTSTEIN), (P.), B., 526.
purification of (GREENSPAN), (P.), B., 41*;
(SCHÜMMER), (P.), B., 184; (GRAY), (P.), B., 230; (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 432; (FLOYD), (P.), B., 700.
distillation of (KITTRIDGE and KITTRIDGE), (P.), B., 41.
fractional (ALLAN), (P.), B., 232*;
(DE GANAHL and KOCH), (P.), B., 397.
steam (HOWARD, CLARK, and STANDARD DEVELOPMENT Co.), (P.), B., 814.
distillation and blending of (NEWTON), (P.), B., 263.

- Hydrocarbons**, apparatus for separation of, by distillation (AVERILL), (P.), B., 352.
- recovery of, from gases (ALLGEM. VERGASUNGS-GES.), (P.), B., 6.
- recovery of vapours of (OBERFELL and GASOLINE RECOVERY CORP.; OBERFELL, BURRELL, and GASOLINE RECOVERY CORP.), (P.), B., 864.
- chlorination of (HOLZVERKOHUNGS-IND. A.-G., KRAUSE, and ROKA), (P.), B., 898.
- bleaching, cracking, and desulphurisation of (REINBOLD and REINBOLD), (P.), B., 6.
- cracking of (NIECE and INTERNAT. HOLDING CO.), (P.), B., 85* ; (VAN DE WATER, SUNDERMAN, and PETROLEUM LABORATORIES; FORREST, HAYDEN, and BARBER ASPHALT CO.), (P.), B., 183 ; (BERRY and DYNAMICS CORP. OF AMERICA), (P.), B., 184 ; (ALLGEM. GES. F. CHEM. IND.; V.L. OIL PROCESSES, LUCAS, and LOMAX), (P.), B., 396 ; (HERTHEL, ISOM, and SINCLAIR REFINING CO.; SINCLAIR REFINING CO., HERTHEL, and PELZER), (P.), B., 908.
- effect of water on aniline points of (ORMANDY and CRAVEN), B., 395.
- desulphurisation of (MASSENET), (P.), B., 231.
- hydrogenation of (INT. BERGIN-CO.), (P.), B., 38.
- acetylenic α -halogenated (GRIGNARD and PERRICHON), A., 381.
- aliphatic, purification of (JENA), (P.), B., 184.
- higher, boiling points of (FRANCIS and WOOD), A., 816.
- aromatic, production of, by cracking (DUNSTAN, PILKETHLY, and BEALE), (P.), B., 622.
- purification of (DOWNS and BARRETT CO.), (P.), B., 815.
- alkylation of (NAUGATUCK CHEM. CO.), (P.), B., 1028.
- action of carbazide and of azoimide on (CURTIUS and BERTHO), A., 1152.
- action of carbonyl azide on (CURTIUS and BERTHO), A., 509.
- manufacture of oxidation products of (GREEN), (P.), B., 480.
- oily and resinous condensation products from aralkyl halides and (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 203.
- halogen derivatives of, viscous, resinous on plastic masses from (CHEM. FABR. SCHERING), (P.), B., 100.
- polynuclear, and their halogen derivatives, oily and resinous condensation products from (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 100.
- condensed nuclear, absorption spectra of (CAPPER and MARSH), A., 557.
- cyclic, heat of combustion of (KONOVALOV), A., 668.
- diethylenic (ESCOURROU), A., 1120.
- gaseous, treatment of (KOBERNIK and NEWTON PROCESS MANUF. CO.), (P.), B., 780 ; (ELLIS and HUNT), (P.), B., 898.
- thermal decomposition of (SZARVASY), (P.), B., 908.
- partial oxidation of (JAMES and BYRNES), (P.), B., 770.
- apparatus for detection of (SEJOL, WINKLER, and PALKON), B., 940.
- heavy, oxidation of (JAMES and BYRNES), (P.), B., 972.
- conversion of, into light hydrocarbons (UNIVERSAL OIL PRODUCTS CO.), (P.), B., 733*.
- gasification of, for internal-combustion engines (MIRLESSE), (P.), B., 1006.
- light, manufacture of (EDELEANU), (P.), B., 700.
- from coal (COMP. DES MINES DE VICOIGNE, NOEUX, & DROCOURT), (P.), B., 182.
- from heavy hydrocarbons, coal tar, pitch, etc. (KNAPP, WANDSBEKER MASCHINENFABR. & EISENBAUUNST. FISCHER & FREIDING), (P.), B., 863.
- blending and purification of (EGLOFF and UNIVERSAL OIL PRODS. CO.), (P.), B., 478.
- liquid, treatment of (JAMES and BYRNES), (P.), B., 973.
- refining of (HULES, GOUDRONS, & DÉRIVÉS), (P.), B., 733.
- determination of water in (WOOD and NEALE), B., 36.
- low-boiling, production of (STANDARD OIL CO., ROGERS, PAULUS, and HUMPHREYS), (P.), B., 733.
- from distillation gases (GELSENKIRCHENER BERGWERKE A.-G. and CASPARI), (P.), B., 574.
- from high-boiling hydrocarbons (WOLF), (P.), B., 972.
- from petroleum (JAMES and BYRNES), (P.), B., 972.
- treatment of (DOWNS), (P.), B., 231.
- mixed, distillation of (MELHARDT), (P.), B., 449.
- fractional distillation of (SOC. ANON. D'OUGRÉE-MARIHAYE), (P.), B., 309.
- Hydrocarbons**, olefine, detection and determination of, by adsorption by chlorine in carbon tetrachloride (SOROKIN and BELIKOV), A., 267.
- paraffin, determination of (STEUER), B., 522.
- petroleum, formation of, from fats (MARCUSSON and BAUER-SCHÄFER), B., 117, 970.
- manufacture of alcohols from (BROOKS), B., 298.
- saturated, action of ozone on (KITA, ABE, and TADA), B., 475.
- unsaturated, from cracking of oils, electrochemical treatment of (THOMAS), (P.), B., 623.
- determination of (BRAME), B., 395, 619 ; (DUNSTAN ; LOMAX and PEMBERTON ; MOORE ; GARNER), B., 395.
- in presence of saturated and tricyclic hydrocarbons (NAMETKIN and BRUSOVA), A., 420.
- gaseous, analysis of mixtures of (DOBRSJANSKI), B., 394.
- determination of different classes of, in motor fuels (EOLOFF and MORRELL), B., 570.
- separation of (AVERILL), (P.), B., 431.
- separation of, from earthy matter (McCLAVE and BITUMINOUS SAND CO.), (P.), B., 814.
- separation of, from oil-bearing earths (ROCKWELL), (P.), B., 863.
- separation of, from low-temperature tar (ZECHE STINNES), (P.), B., 184.
- Hydrocarbons**, halogen derivatives, preparation of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 464.
- narcotic and toxic effects of (MÜLLER), B., 75.
- chloro-, aromatic electrochemical oxidation of (FICHTER and ADLER), A., 509.
- Hydrocellulose** (KARRER and LIESER), B., 267 ; (BIRTWELL, CLIBBENS, and GEAKE), B., 529.
- chlorinated (DE NEYMAN), B., 435.
- Hydrochloric acid**. See under Chlorine.
- Hydrocobaltocyanic acid**, potassium salt, compound of carbon monoxide and (MANCHOT and GALL), A., 694.
- Hydrocuprocyanic acid**, potassium salt, hydrolysis of, by sulphuric acid (CORBET and WOODMAN), A., 922.
- Hydrocyanic acid**. See under Cyanogen.
- Hydrocinnamaldehyde**, action of ultra-violet light on (FRANKE and SIGMUND), A., 292.
- Hydrocinnamic acid**, $\alpha\beta$ -3:5-tetrabromo-2-amino-. See β -Phenylpropionic acid, $\alpha\beta$ -dibromo- β -3:5-dibromo-2-amino-.
- Hydroferrocyanic acid**, salts of (TARUGI), A., 259.
- determination of (CUMMING and GOOD), A., 1019.
- determination of, with titanous salts (SOMEYA), A., 1116.
- potassium salt, manufacture of (BARSKY and AMER. CYANAMIDE CO.), (P.), B., 708.
- oxidation of carbohydrates by (KNECHT and HIBBERT), A., 149.
- Hydroferrocyanic acid**, salts of (TARUGI), A., 259.
- determination of (CUMMING and GOOD), A., 1019.
- alkali and alkaline-earth salts, photochemical reactions of, in presence of mercuric chloride (GASPAR Y ARNAL and CASTRO-GIRONA Y POZURAMA), A., 920.
- calcium, potassium, and sodium salts, solubility of (FARROW), A., 236.
- copper salt, colloidal, permeability of membranes of (SEN), A., 349.
- ferrie and potassium salts, as source of iron for plants (DEUBER), B., 458.
- potassium salt, decomposition of, by light (ROSSI and BOCCHI), A., 253.
- sodium salt, as reagent for ammonium and potassium (GASPAR Y ARNAL), A., 591.
- Hydroferropentacyanic acid**, sodium salt, compound of nitrosobenzene and (CAMBI), A., 277.
- Hydrofluoric acid**, tetrachloro-3-hydroxy- and its acetate (ORNDORFF and JOHNSON), A., 1043.
- Hydrofluozirconic acid**. See under Fluorine.
- β -Hydroformamine cyanide (RINEHART), A., 1236.
- Hydrogels** (WILLSTÄTTER, KRAUT, and ERBACHER), A., 34, 35 ; (WILLSTÄTTER, KRAUT, and LOBINGER), A., 36.
- and hydrates (ZSIGMONDY), A., 473.
- inorganic, freezing of (HEPBURN), A., 473.
- Hydrogen**, valency of (BLANCHARD), A., 662.
- extraction of, from industrial gases (AMMONIA), (P.), B., 440.
- from gaseous mixtures (SOC. D'ÉTUDES ET DE CONSTRUCTIONS METALLURGIQUES), (P.), B., 407.

Hydrogen, manufacture of (CICALI), (P.), B., 351; (CLAUDE and LAZOTE), (P.), B., 407*; (ROGERS), (P.), B., 487, 584; (AIRSHIP GUARANTEE Co. and TEED), (P.), B., 539; (JOURDAN and GALL), (P.), B., 584; (ADAMS; VAN NUYS and AIR REDUCTION Co.), (P.), B., 708; (LILJENROTH and PHOSPHORUS-HYDROGEN Co.), (P.), B., 789*; (JAKOWSKY), (P.), B., 924; (BEAUMONT), (P.), B., 946.
 catalytic manufacture of (SYNTHETIC AMMONIA & NITRATES, LTD., and SCHULTZE), (P.), B., 13; (I. G. FARBENIND.), (P.), B., 916.
 from steam and carbon monoxide (PATART), (P.), B., 156.
 production of, from water-gas (DE GRAER), (P.), B., 479*; (EVANS and NEWTON), B., 698.
 from water-gas and steam (FRÄNKEL), (P.), B., 908.
 from steam in a hot boiler tube (PORTER), B., 255.
 for hydrogenation of naphthalene (PRUDHOMME), (P.), B., 654.
 production of mixtures of nitrogen and (HUMPHREY and SYNTHETIC AMMONIA & NITRATES, LTD.), (P.), B., 89; (EDWIN), (P.), B., 630; (CLANCY and NITROGEN CORP.), (P.), B., 822.
 manufacture of phosphoric acid and (LILJENROTH), (P.), B., 320.
 purification of, for synthetic ammonia (L'AIR LIQUIDE), (P.), B., 916.
 spectrum of (SLATER), A., 101; (HOUSTON), A., 549; (SOMMERFELD and UNSÖLD), A., 549, 985.
 structure of lines in (JANICKI and LAU), A., 1; (HANSEN; GEHRCKE), A., 101; (VAN CITTERT), A., 445; (BUCHERER), A., 765.
 Balmer lines in (McLENNAN and IRETON), A., 2; (HANOT), A., 765.
 Doppler effect on (NAKAMURA), A., 873.
 quantum mechanics of (PAULI), A., 555.
 Lyman region in (PFUND), A., 649.
 self-reversal of the red line in (WOOD), A., 1069.
 excitation of, by electron impact (LOWE), A., 769, 1074.
 absorption spectrum of (HOPFIELD and DIEKE), A., 1078.
 are spectra of, and its mixtures with mercury and nitrogen (KWEI), A., 7.
 continuous spectrum of (SCHÜLER and WOLF), A., 213.
 secondary spectrum of (DUFFENBACK), A., 7; (SANDEMAN), A., 213; (CURTIS), A., 445; (RICHARDSON; ALLIBONE), A., 873; (SMYTH and BRASEFIELD), A., 881.
 ultra-violet spectrum of (LYMAN), A., 873.
 Stark effect for (FOSTER), A., 2, 987; (WALLER; EPSTEIN), A., 987; (FOSTER and CHALK), A., 1070.
 excitation of radiation in, by electron impacts (SLACK), A., 875.
 passage of canal rays through (RUFF), A., 450.
 Doppler effect in canal rays of (KREFFT), A., 218.
 scattering of positive rays by (THOMSON), A., 656.
 emission of light by positive rays of (BLOCH), A., 330.
 scattering and absorption of positive rays of (CONRAD), A., 106, 990.
 molecular field of (LENNARD-JONES and COOK), A., 888.
 photo-ionisation experiment with (MOHLER), A., 993.
 high-vacuum arc in (NEWMAN), A., 1069.
 production of discharges in (LUNT), A., 985.
 electrodeless discharge in (SOHLESINGER), A., 1189.
 striated discharge in (KEYS), A., 7; (BRAMLEY), A., 107.
 critical potentials and heat of dissociation of (WITMER), A., 552.
 critical potentials of, in presence of catalytic copper and nickel (WOLFENDEN), A., 217.
 overpotential of, on finely-divided metals (CENTNERSZWER and STRAUMANIS), A., 131.
 ionisation by impacts in (COMPTON and VAN VOORHIS), A., 1074.
 ionisation of, by slow electrons (KALLMANN and BREDIG), A., 104.
 ionisation potentials of, on iron and other metals (KISTIAKOWSKY), A., 1188.
 mobility of ions in flames of, and of its mixtures with chlorine (BOUCHER), A., 105.
 mobility of electrons in (WAHLIN), A., 653.
 dissociation of, by excited mercury atoms (COMPTON and DUFFENBACK), A., 3; (MEYER), A., 777.
 transport numbers of sodium and, in mixed chloride solution (TAYLOR), A., 478.

Hydrogen, orbits and radiation of electrons of (ENGSET), A., 991, 1191.
 electro-affinity of (Joos and HÜTTIG), A., 686, 803, 1189; (KASARNOVSKI), A., 876.
 liquid and solid, variation in dielectric constants of, with temperature (WERNER and KEESOM), A., 559.
 atoms, mechanics of (DIRAC), A., 451.
 times of excitation of (McPETRIE), A., 652.
 heating by means of (BRITISH THOMSON-HOUSTON Co. and LANGMUIR), (P.), B., 198.
 polarisation of, in organic compounds (VAN ARKEL and DE BOER), A., 888.
 structure of ionised molecules of (UREY), A., 333.
 scattering of protons in (THOMSON), A., 218.
 atomic volumes of carbon and (SHORT), A., 994.
 thermal conductivity of (SCHNEIDER), A., 462, 785.
 heat of adsorption of, on nickel (FRYLING), A., 800.
 heat of dissociation of molecules of (BODENSTEIN and JUNG), A., 680.
 specific heat of, and half quanta (HUTCHINSON and VAN VLECK), A., 1078.
 isothermals of (VAN AGT), A., 233; (VAN AGT and ONNES), A., 234; (HOLBORN and OTTO), A., 1000.
 and its mixtures with nitrogen (VERSCHOYLE), A., 894.
 adsorption of, by catalysts (LAZIER and ADKINS), A., 467.
 by metals, and formation of hydrides (HÜTTIG), A., 254.
 by pyrophoric metals (NIKITIN), A., 673.
 by calcium and sodium (KAMIEŃSKI), A., 809.
 by neodymium and praseodymium (SIEVERTS and ROELL), A., 356.
 in potassium vapour arcs (RUSK), A., 249.
 by thorium and zirconium (SIEVERTS and ROELL), A., 810.
 adsorption of mixtures of carbon dioxide and, by wood charcoal (MAGNUS and ROTH), A., 346.
 solubility of, in aluminium and in tin at high temperatures (BIRCHUMSHAW), A., 344.
 equilibrium of palladium with (GILLESPIE and HALL), A., 682.
 diffusion of, through quartz glass (ELSEY), A., 895.
 penetration of, through iron (KNOBEL and NORTON), A., 479.
 passage of, through nickel (LOMBARD), A., 349.
 inflammability of, mixed with air, in presence of alkyl bromides and iodides (TANAKA and NAGAI), A., 1106.
 explosion of mixtures of ammonia and, with air or oxygen (JORISSEN and ONOKIEHONG), A., 359.
 ionisation in explosions of mixtures of oxygen and (GARNER and SAUNDERS), A., 1205.
 calcium compounds with (HÜTTIG and BRODKORB), A., 809.
 photochemical reaction of chlorine with (MARSHALL), A., 34, 484, 808; (CATHALA), A., 484; (PADOA and VITA), A., 808.
 action of chlorine on, exposed to light and α -rays (PORTER, BARDWELL, and LIND), A., 1111.
 influence of water on action of halogens with (LEWIS and RIDEAL), A., 1111.
 transformation of, into helium (PANETH and PETERS), A., 1077.
 interaction of nitrous oxide and, on the surface of gold (HUTCHINSON and HINSHELWOOD), A., 807.
 interaction of nitric oxide and (HINSHELWOOD and GREEN), A., 579.
 combination of oxygen and, in presence of excited mercury atoms (MARSHALL), A., 252.
 formation of hydrogen peroxide from oxygen and (BONHOEFFER and LOEB), A., 583.
 action of, under pressure on solutions of metallic salts (IPATIEV, KLJUKVIN, KISSELEY, KONDYREV, and NIKOLAJEV), A., 921.
 displacement of platinum from its salts by (IPATIEV and ANDREEVSKI), A., 921.
 activation of, by catalysts (HOCART), A., 482.
 by iron (TODA), A., 943.
 by decomposition of ozone (GRUBB), A., 588.
 liberation of, in coal distillation (L'AIR LIQUIDE), (P.), B., 350.
 motor fuel from carbon monoxide and (ELVINS and NASH), B., 570.
 active, properties of (BONHOEFFER), A., 38.
 reactions of, with gases (BOEHM and BONHOEFFER), A., 586.
 determination of (FISCHER and POSTOWSKY), A., 630.
 atomic, welding by means of (BRITISH THOMSON-HOUSTON Co. and PALMER), (P.), B., 368.
 arc welding with (WEIMAN and LANGMUIR), B., 550.
 flames of (LANGMUIR), B., 549, 550.

Hydrogen, cathodic, influence of, on strength of steel (ALEXÉEV and POLUKAROV), B., 550.

Hydrogen bromide. See Hydrobromic acid under Bromine.

chloride. See Hydrochloric acid under Chlorine.

cyanide. See Hydrocyanic acid under Cyanogen.

halides. See Halogen hydrides.

iodido. See Hydriodic acid under Iodine.

peroxide, formation of, in the oxyhydrogen flame (RIESENFELD and v. GÜNDELL), A., 697.

electrolytic production of (SIEMENS & HALSKE A.-G.), (P.), B., 666.

manufacture of (RHEINANIA VER. CHEM. FABR. and MARTIN), (P.), B., 127.

evolution of, from oils on exposure to light (STUTZ, NELSON, and SCHMUTZ), B., 20.

decomposition of, by metallic hydroxides (VEIL), A., 667.

effect of metallic salts on, by blood (BLEYER), A., 86.

catalytic decomposition of (PISARSHEVSKI and ROITER), A., 917.

in bromine-bromide solutions (LIVINGSTON), A., 251.

in chlorine-chloride solutions (LIVINGSTON and BRAY), A., 364.

by potassium dichromate in presence of cobalt salts (ROBERTSON), A., 917.

catalysis of the decomposition of, by colloids (GALECKI and BINOER; GALECKI and KRZECZKOVSKA), A., 251.

oxidation with (WITZEMANN), A., 269, 270; (HATCHER and HOLDEN), A., 270.

oxidation of ethyl alcohol by, in presence of ferrie salts (WALTON and CHRISTENSEN), A., 918.

reaction between iodine and (CHRISTIANSEN), A., 33.

solution of silver micelles by (FODOR), A., 795.

fogging action of (CLARK), B., 253.

bleaching of wool with (S. E. and E. R. TROTMAN), B., 534.

preparation of concentrated solutions of (DE HAEN A.-G.), (P.), B., 823.

stabilisation of solutions of (WINTSCH and COMEY), (P.), B., 53; (KARSTEN-SALMONY), B., 537.

effect of gelatin on decomposition of boiling aqueous solutions of (KUBELKA and WAGNER), A., 905.

fire risk of concentrated solutions of (AGDE and ALBERTI), B., 821.

selenide, solubility of, in water (MCAMIS and FELSING), A., 17.

sulphide, manufacture of (BINDSCHEDLER, RUGELEY, and TUBIZE ARTIF. SILK CO.), (P.), B., 126; (EHRENBERG, WIEDERHOLD, KRUG, HOLSBOER, FISOHER, and STUDIENGES. F. AUSBAU DER IND.), (P.), B., 237; (SPERR and KOPPERS Co.), (P.), B., 440*.

production of, by bacteria (KAHN), A., 435.

monatomic molecules of (v. WISNIEWSKI), A., 1194.

optical anisotropy of (RAMANATHAN and SRINIVASAN), A., 336.

equilibrium of boron trifluoride with (GERMANN and BOOTH), A., 475.

utilisation of energy liberated during oxidation of (BESEMFELDER), (P.), B., 320.

reduction of ferrie salts with (MOLDENHAUER and MISCHKE), A., 691.

action of, on neutral solutions of potassium permanganate (DUNNICLIFF and NIJHAWAN), A., 256.

interaction of sulphur dioxide and (MATTHEWS), A., 1108.

generator for (DENHAM and PACKER), A., 815.

recovery of (SPERR and KOPPERS Co.), (P.), B., 440*.

removal of, from gases (KOPPERS Co.), (P.), B., 5; (WOODALL-DUCKHAM, SMITH, and FINLAYSON), (P.), B., 230; (COULIER), (P.), B., 673; (I. G. FARBERIND.), (P.), B., 876; (GLUUD), (P.), B., 908*; (PETIT), (P.), B., 1006*.

from fuel gas (SPERR and KOPPERS Co.), (P.), B., 431*.

from fuel gases and air (KOPPERS Co.), (P.), B., 39.

from solutions (DESGREZ, LESCŒUR, and MANJEAN), A., 1113.

separation of sulphur from gases containing (MÜHLERT), (P.), B., 407.

effect of, on chemical processes in cells (NEGELEIN; NEUBERG and PERLMANN), A., 434.

absorption of, in blood (DESGREZ, BIERBY, and LESCŒUR), A., 750.

determination of, in gases from decomposition of viscose (HOGEL), B., 399.

Hydrogen detection, determination, and separation:—

detection of, in bacterial fermentation (GRÜSS), A., 865.

determination of small quantities of (LEBEAU and MARMASSE), B., 538.

determination of, in illuminating gas (STEUER), B., 3.

determination of, in metals (JORDAN and ECKMAN), B., 94.

determination of, in organic compounds (BERL and BURKHARDT), A., 749.

determination of carbon monoxide in (SCHUFTAN), B., 405.

separation of, from gas mixtures (BARJOT), (P.), B., 584.

separation of, from water-gas (CICALI), B., 582.

Hydrogen electrodes. See Electrodes.

Hydrogen ions, influence of electrolytes on adsorption of (AARNIO), A., 1090.

concentration of, relation between fluorescence and (DESHA, SHERRILL, and HARRISON), A., 776.

and alcoholic fermentation (HÄGGLUND, SÖDERBLUM, and TROBERO; HÄGGLUND and AUGUSTSSON), A., 543.

as basis of control of alkalinity in sugar refining (BLOWSKI and HOLVEN), B., 169.

scale for direct reading of (HOCK), A., 706.

representation of, in organic media (GUILLAUMIN), A., 954.

preparation of solutions of standard (CRAY and WESTRIP), A., 374.

buffer mixture for determination of (ATKINS and PANTIN), A., 374.

determination of, at high temperatures (KOLTHOFF and TEKELENBURG), A., 1220.

determination of, colorimetrically (STERN), A., 38; (JANKE and KROPACSY), A., 927.

determination of, colorimetrically and electrometrically (LEPPER and MARTIN), A., 442.

determination of, electrometrically (KANITZ; MENZEL and KRÜGER), A., 374; (WOLF), A., 927; (TRÉNEL), (P.), B., 208.

apparatus for (LÜERS), A., 813.

determination of, with hydrogen or quinhydrone electrodes (MEEKER and OSER), A., 442.

determination of, with the Lehmann micro-electrode (VLADIMIROV and GALVALLO), A., 38.

determination of, by the quinhydrone method (HETTERSOHL and HUDIG), A., 139; (HOCK; KOLTHOFF), A., 701.

determination of, in soils (AGHNIDES), B., 892.

determination of, and its significance in the beet-sugar industry (TÖDT), B., 927.

determination of, in the cane-sugar industry (BALCH and PAINE), B., 927.

determination of, in water (KLINO and LASSIEUR; KOLTHOFF), A., 355.

Hydrogenase (GRÜSS), A., 865.

Hydrogenation, production of catalysts for (RIEDEL), (P.), B., 346.

Hydrolysis, curves showing dissociation during (BARRATT), A., 245.

Hydrometers (F. C. and H. S. JEWELL), (P.), B., 114*; (STEVENSON and STEVENSON, jun.), (P.), B., 1000.

Baumé, temperature corrections to readings of (U.S. BUREAU OF STANDARDS), B., 560.

Hydronickelecyanic acid, potassium salt, compound of carbon monoxide and (MANCHOT and GALL), A., 698.

Hydrophthalides (BERLINGOZZI and MAZZA), A., 835.

Hydroplatinoecyanic acid, barium salt, change of colour of, on exposure to X-rays or heat (TRAPEŠNIKOV), A., 885.

Hydrosinomenine, and its methiodide and derivatives (GOTO), A., 1160.

Hydrosulphide liquors, analysis of (PAULI), B., 629.

Hydroxides, production of carbonates and (BUCHNER), (P.), B., 1013.

soluble, preparation of (MEYERHOFFER and DE HAEN A.-G.), (P.), B., 12; (MEYERHOFFER), (P.), B., 126.

magnetic analysis of (VEIL), A., 998.

See also Metallic hydroxides.

Hydroxonio acid, salts of (BILTZ and HANISCH), A., 414.

Hydroxopentamminechromic salts. See under Chromium.

Hydroxy-acids, complex compounds of boric acid with, and their dissociation (KOLTHOFF), A., 1206.

α-, β-, and γ-Hydroxy-acids, configurational relationship between (LEVENE and HALLER), A., 1024, 1122.

α-Hydroxyaldehydes, aromatic, condensation of, with α-cyanoacetophenone (GHOSAL), A., 1149.

- Hydroxyazo-dyes. See Azo-dyes, hydroxy-.
- Hydroxy-compounds, decomposition of substituted carbamyl chlorides by (PRICE), A., 481.
- α -Hydroxyketones (LEERS), A., 599.
- Hydroxyl ions, ultra-violet bands in spectrum of (WATSON), A., 222.
- mobilities of (RAIKES, YORKE, and EWART), A., 477, 579.
- Hydroxyl groups of different types, detection of (FREUDENBERG and HESS), A., 935.
- Hydroxylamine, action of, on chromones (WITTIG and BANGERT), A., 175, 176.
- reaction of ferric chloride with (MITCHELL), A., 580.
- action of, on *s*-trinitrotrimethoxybenzene and *s*-trinitrotriphenoxybenzene (VAN RIJN), A., 510.
- detection of (BLOM), A., 375.
- determination of, colorimetrically (PUCHER and DAY), A., 490.
- Hydroxypentamineplatinum carbonate. See under Platinum bases.
- Hygiene, industrial, chemistry of (KLEIN), B., 998.
- Hygroscopicity, apparatus for determination of (GERICKE), B., 601.
- Hylargography (BOAS), A., 1276.
- Hymenomyces*, soluble enzymes secreted by (LUTZ), A., 869.
- Hydoxycholic acid, constitution of, and its derivatives (WINDAUS), A., 723.
- Hypertonia, relation between lipolytic power and cholesterol content of blood in (DÖRLF and WEISS), A., 426.
- Hypasamine, and its copper salt (ENGELAND), A., 55.
- Hypnotics (LUMIÈRE and PERRIN), A., 1273.
- partition of, between water and organic solvents (VELLIZ), A., 672, 1172.
- of the barbituric acid series (NIELSEN, HIGGINS, and SPRUTH), A., 540.
- Hypochlorous acid. See under Chlorine.
- Hypoglycæmia, guanidine (FRANK, NOTHMANN, and WAGNER), A., 1054.
- insulin, mechanism of (GLASSMANN), A., 1169.
- influence of various substances on (MOSCHINI; REEVES and HEWITT), A., 1063.
- effect of dihydroxyacetone on (CAMPBELL and HEPBURN), A., 979.
- sugar in blood in (ERNST and FÖRSTER), A., 546.
- Hyponitritoferropentacyanic acid, sodium salt, true nature of supposed (CAMBI), A., 277.
- Hypophysis, distribution of active substance of (VAN DYKE), A., 1064.
- Hypoxanthine, oxidation of, by oxydase and peroxydase (HARRISON and THURLOW), A., 641.
- I.
- Ice, apparatus for producing crystals of (MEYNARDIE), (P.), B., 31.
- sea water. See Sea water under Water.
- Ice-cream, effect of milk salts on whipping ability of (SOMMER and YOUNG), B., 847.
- determination of fat in, by the Babcock-Gerber method (MOORE and MORSE), B., 895.
- Ichthyol oils, constituents of (SCHEIBLER and RETTIG), B., 624.
- Idya furcata*, orange-yellow pigment from the eye of (LVOV), A., 1052.
- Ignition of gases (DIXON, HARWOOD, and HIGGINS), A., 689.
- by sudden compression (TIZARD and PYE), A., 690.
- spontaneous, temperatures of, of inflammable liquids (TANAKA and NAGAI), A., 1087.
- Ignition-plugs, ceramic bodies for (WATAYA), B., 54.
- Ileus, experimental, carbohydrate metabolism in (LANGE and SPEOHT), A., 1169.
- Illinium, X-ray spectrum of (LAPP, ROGERS, and HOPKINS; ROLLA and FERNANDES), A., 1083.
- Illipé nut, small Siak. See *Palaequium Burkii*.
- Ilmenite, recovery of vanadium from (RADIIUM & RARE EARTHS TREATMENT Co. and COOKE), (P.), B., 756.
- 6:7-Iminazindazole (FIESER), A., 625.
- β -Iminazoly-(4 or 5)-pyruvic acid (BERGER and STEWART), A., 1260.
- Iminoacetic acid, bornyl ester, and its hydrochloride, and α -hydroxy-, ethyl ester (HOUBEN and FRANKUCH), A., 1236, 1237.
- Imino-aryl ethers (CHAPMAN), A., 1138.
- Imino-bromides and -chlorides, fission of (v. BRAUN and JOSTES), A., 825.
- Imino-groups (SCHMIDT), A., 59.
- Iminolactones (HOUBEN and FRANKUCH), A., 951, 1247.
- Immunisation, physico-chemical changes following (DU NOTY), A., 423.
- of vegetable fibres (TAGLIANTI), B., 872.
- detection of proteolytic action during (KUPELWIESER and NAVRATIL; KUPELWIESER and WILHEIM), A., 86.
- Impregnation, manufacture of medium for (NORSK HYDRO-ELEKTRISK KVAELSTOFAKTIESELSKAB), (P.), B., 501.
- Impregnation compositions (FARBENF. FORM. BAYER & Co.), (P.), B., 796; (A. C. and M. HOLZAPFEL), (P.), B., 988.
- bituminous (HAY), (P.), B., 595.
- Incandescence bodies for electric lamps (GEN. ELECTRIC Co. and PATENT TREUHAND GES. F. ELEKTR. GLÜHLAMPEN), (P.), B., 89.
- Indanthrene Blue RS and GGD, red and green shades of (ZIMMERFELDT), B., 264.
- Indanthrene dyes, analysis of vats of (DURST and ROTH), B., 819.
- Indanyl bases (COURTOT and DONDELINGER), A., 59; (COURTOT and PETITOULAS), A., 607.
- Indazole derivatives (v. AUWERS and STRÖDTER), A., 528.
- 1:2-methylacetyl derivatives (v. AUWERS and ALLARDT), A., 306.
- Indazole, 6:7-diamino-, and 7-amino-6-hydroxy-, and their hydrochlorides (FIESER), A., 625.
- nitro- (BAMBERGER, PADOVA, and ORMEROD), A., 416.
- Indazole-7-azobenzene, 6-hydroxy- (FIESER), A., 625.
- Indazole-7-azobenzene-4'-sulphonic acid, 6-amino- (FIESER), A., 625.
- Indazole-1:3-dicarboxylic acid, methyl ester (v. AUWERS and STRÖDTER), A., 529.
- 6:7-Indazolequinone-4-sulphonio acid, sodium salt (FIESER), A., 625.
- Indazole-4-sulphonic acid, 6:7-dihydroxy-, and its sodium salt (FIESER), A., 625.
- 1:2:3:12-Indazophenanthrazine. See 6:7-Phenanthrazinoindazole.
- Indazylacetic acids, and their derivatives (v. AUWERS and ALLARDT), A., 307.
- Indazylpropionic acids, and their derivatives (v. AUWERS and ALLARDT), A., 307.
- 2:3-Indeno-(1:2)dimethoxybenzopyrylium ferrichlorides (PERKIN, RAY, and ROBINSON), A., 733.
- India, Western, composition of food grains, vegetable, and fruits of (SAHASRABUDDHE), B., 963.
- Indicators, tables of (GRAY and WESTRIP), A., 374.
- salt errors of, caused by standard alkaline buffers (MOBAIN, DUBOIS, and HAY), A., 590.
- distribution of, in immiscible solvents (HOLLÓ and DEUTSCH), A., 1001.
- for titration of alkaloids (WALES), B., 461.
- for the cellulose industry (OEMAN), B., 531.
- oxidation-reduction, penetration of, into cell sap (BROOKS), A., 639.
- turbidity (NAEGELI), A., 355.
- Indigo, synthetic, preparation of (LEPETIT), B., 121.
- electrochemical reduction of (NEVYAS and LOWY), A., 1111.
- influence of additions to the vat on dyeing with (HALLER), B., 819.
- orange colour in vats of, containing nitrobenzene (POMERANZ), B., 913.
- dyeing of wool with (PETERHAUSER), B., 535.
- and its derivatives, dyeing of wool with (DURAND & HOUENIN), (P.), B., 235.
- printing coloured discharges on, by means of vat dyes (SUNDER and SOLBACH; MICHEL), B., 402.
- printing of white and red discharges on (POKORNY; SEYDER), B., 437.
- Indigo dyes (SOC. CHEM. IND. IN BASLE), (P.), B., 480*; (GUPTA), (P.), B., 736.
- containing sulphur, manufacture of (FARBW. FORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 703.
- Indigo-yellow 3 G ciba, constitution and derivatives of (POSNER and HOFMEISTER), A., 1156.
- Indigosol O, dyeing and printing with (FRIEDLÄNDER), B., 705, 783, 872.
- Indigotin, stereochemical formula for, and its action with acid chlorides (POSNER, STOCKENSCHNEIDER, NEUMANN, NACHRING, MEYER, and BEISSNER), A., 1155.
- substitution derivatives of (OVERMYER), A., 415.
- Indigotin, 5:7:5':7'-tetrabromo-, derivatives of (POSNER, STOCKENSCHNEIDER, NEUMANN, NACHRING, MEYER, and BEISSNER), A., 1156.

- Indigotin group** (POSNER, STOCKENSCHNEIDER, NEUMANN, NACHRING, MEYER, and BEISSNER), A., 1155; (POSNER and HOFMEISTER), A., 1156.
- Indirubinmalonic acid**, and its benzoyl derivative, ethyl esters (POSNER, STOCKENSCHNEIDER, NEUMANN, NACHRING, MEYER, and BEISSNER), A., 1156.
- Indium vapour**, ultra-violet absorption spectra of (FRAYNE and SMITH), A., 214.
- electrical resistance of (SIZOO and ONNES), A., 230.
- Indium halides** (KLEMM), A., 669.
- Indole**, preparation of (VAN DER LEE), A., 179.
- production of, by bacteria (KULP), A., 435.
- condensation of, with triketohydrindene hydrate (TOMITA and FUKAGAWA), A., 1257.
- molecular compound of trinitroxyleno and (SKRAUP and EISEMANN), A., 999.
- derivatives, preparation of, from magnesium indolyl iodide (PUTOCHIN), A., 1151.
- Indole series**, transitions from, to the quinoline series (HELLER, FUCHS, JACOBSON, RASCHIG, and SCHÜTZE), A., 620.
- Indole-3-acetic acid**, 5:7-diiodo-, preparation of (CHEM. FABR. VORM. SCHERING), (P.), B., 852.
- Indole-3-aldoxime** (PUTOCHIN), A., 1151.
- Indole-2-carboxylic-3-propionic acid**, and its ethyl ester (KALB, SCHWEIZER, and SCHIMPF), A., 1152.
- Indole-2-carboxylic-3-propionic acid**, 5-iodo-, 4:5:6-triiodo-, and 5-nitro-, and its ethyl ester (KALB, SCHWEIZER, ZELLNER, and BERTHOLD), A., 1152.
- Indole-3-propionic acid**, preparation of (KALB, SCHWEIZER, and SCHIMPF), A., 1151.
- Indole-3-propionic acid**, 5:7-diiodo- (CHEM. FABR. VORM. SCHERING), (P.), B., 852.
- 2- α -Indolyl-2-hydroxy-3:1-diketohydrindene** (TOMITA and FUKAGAWA), A., 1257.
- Indones**, substituted, synthesis of (LÖWENBEIN and ULLICH), A., 171.
- Indophenols**, preparation of (FARB. v. BAYER & Co.), (P.), B., 121.
- Indophenolbenzidine dyes**, bluish sulphurised (SOC. CHEM. IND. IN BASLE), (P.), B., 86*.
- Indophenol-blue**, formation of crystals of, in presence of colloids (SERENI), A., 95.
- Indophthalone**, and its silver salt (ODDO; ODDO and PEROTTI), A., 1157.
- Indoxazen**, and 4-nitro- (LINDEMANN and THIELE), A., 1047.
- Indoxazen**, 4:6-dibromo- (LINDEMANN and MÜHLHAUS), A., 80.
- Indoxazens** (LINDEMANN and MÜHLHAUS), A., 80.
- Indoxyl**, manufacture of (DOW and DOW CHEMICAL Co.), (P.), B., 185.
- Induline dyes**, formation of (BROWN and CUMMING), B., 909.
- Inertia**, law of, for radiating masses (LARMOR), A., 333.
- Infants**, carbohydrate metabolism of (TISDALL, DRAKE, and BROWN), A., 861.
- subcutaneous fat in (CHANNON and HARRISON), A., 425.
- nitrogen metabolism of (ELLINGHAUS, MÜLLER, and STEUDEL), A., 197.
- Infundibulum**, stability of oxytocic principle of (STASIAK), A., 980.
- Injections**, intravenous, solutions for (SCHIROKAUER), (P.), B., 902.
- Ink or Inks**, manufacture of (CROSS and ENOELSTAD), (P.), B., 533.
- aluminium and iron salts of, and their ageing (ZETZSCHE and LOOSLI), A., 67.
- black, from nitro-derivatives of dinaphthylene dioxide (INOUE), (P.), B., 596.
- acid-proof and water-proof, manufacture of (INOUE), (P.), B., 638*.
- printers', manufacture of (CAJAR), (P.), B., 333*.
- material containing sulphur for use in (GELSENKIRCHENER BERGWERKS-A.-G. and SCHÜTZ), (P.), B., 865.
- writing, determination of the acidity of, electrometrically (BROMLEY and DE WAELE), B., 1020.
- Ink texts**, bleached, revelation of (MELLET and BISCHOFF), B., 49.
- Inorganic compounds**, changes in volume in formation of (MOLES), A., 559.
- complex, nomenclature for (STECHE), A., 227.
- crystalline, molecular volumes of (MOLES), A., 778.
- volatile, molecular volumes of (RABINOVITSCH), A., 226; (SCHWAB), A., 661.
- Inositol**, configuration of (BÖESEKEN and JULIUS), A., 818.
- Insects**, metamorphosis of (HELLER), A., 197.
- skin skeleton of (SCHMALFUSS and WERNER), A., 316.
- structural colours in (MASON), A., 538.
- Insects**, attractant for (SMITH, RICHMOND, and VAN DER MEULEN), (P.), B., 336.
- protection of substances against (KENDALL), (P.), B., 314.
- fat fibres on needles for spearing (SCHMIDT), A., 1099.
- mandibulate, toxicological investigations on (CAMPBELL), B., 506.
- Insecticides** (SEIL, HEDENBURG, MOBURO, and ROESSLER & HASSLAOHER CHEM. Co.), (P.), B., 30; (DICKENS), (P.), B., 139*; (CALIFORNIA SPRAY-CHEMICAL Co.; HEDENBURG and MOBURG), (P.), B., 208; (KREIDL), (P.), B., 209; (FRYER and McDUGALL & YALDINO), (P.), B., 293, 507*; (BASSETT, ISAACS, and U.S. PRODUCTS CORP.), (P.), B., 293; (HAND and RUBBER SERVICE LABS. Co.), (P.), B., 379; (BADISCHE ANILIN- & SODA-FABR.; SCHWEITZER and GRASSELLI CHEM. Co.), (P.), B., 458; (HOLTON and SHERWIN-WILLIAMS Co.), (P.), B., 507; (ROARK), (P.), B., 564; (SIEGLER and POPENOE), (P.), B., 717; (RUBBER SERVICE LABORATORIES Co.), (P.), B., 934*; (COHEN, LEERBURGER, and INTERSTATE CHEM. Co.), (P.), B., 1030.
- manufacture of (VIDAL), (P.), B., 960.
- manufacture of media for (FARB. VORM. BAYER & Co.), (P.), B., 927.
- fifty years of (HOLTON), B., 843.
- improving adhesion of, to plants (FARB. v. BAYER & Co.), (P.), B., 379; (SONNE), (P.), B., 893.
- silicofluorides as (MARCOVITCH), B., 694.
- for moths (STRAUB), (P.), B., 188.
- for tobacco plants (HOWARD and GRASSELLI CHEMICAL Co.), (P.), B., 559.
- arsenical, examination of (LOMANITZ), B., 506.
- lead arsenate (GOODWIN and LATIMER CHEMICAL Co.), (P.), B., 507*.
- liquid, from *Derris* species (ZAIDAN HOJIN RIKAGAKU KENKYUJO), (P.), B., 614.
- petroleum (GRAY and DE ONG), B., 293.
- pyrethrum, preparation of (YAMAMOTO, INOUE, and NOSAWA; I. G. FARBENIND.), (P.), B., 894.
- soil, arsenates as (LEACH), B., 840.
- determination of toxic substances in (BODNAR and TERÉNYI), B., 997.
- Insulating coatings**, electrical, for metals (WEINTRAUB and Soc. ALSAOIENNE DE CONSTRUCTIONS MÉCANIQUES), (P.), B., 756.
- Insulating liquids**. See under Liquids.
- Insulating materials**, manufacture of (DAWES, BOUGHTON, and NEW ENGLAND MICA Co.), (P.), B., 447.
- flame-proof (WESTERN ELECTRIC Co., LTD.), (P.), B., 676.
- electrical, production of (FRIEDLÄNDER and JANSER), (P.), B., 986.
- fibrous, effect of humidity on dielectric losses and power factors in (SETOH and TORIYAMA), B., 370.
- Insulation**, electrical, impregnated (DREHER and GEN. ELECTRIC Co.), (P.), B., 285*.
- rubber, mechanical test for (HIPPENSTEEL), B., 452.
- Insulators**, electrical (SAMUEL), B., 198.
- manufacture of (BROWN and SILUMINITE INSULATOR Co.), (P.), B., 986.
- composition for (LABBE and AMER. SMELTING & REFINING Co.), (P.), B., 198.
- from sapropel tar (ZELINSKI and MAXOROV), B., 121.
- high-tension, porcelain for (REICHAU), B., 158.
- See also under Electrical.
- Insulin**, constitution of (BRAND and SANDBERG), A., 1278.
- isolation of (FUNK), A., 1062.
- chemistry of (SCOTT, GLASER, and HALPERN), A., 97.
- chemical nature of (FELIX and WALDSCHMIDT-LEITZ), A., 1278.
- chemical assay of (BISCHOFF, MAXWELL, and BLATHERWICK), A., 643.
- nickel and cobalt in (BERTRAND and MACHEBOEUF), A., 869.
- properties, dialysis and adsorption of (DINGEMANSE), A., 98.
- action of (LANGECKER and STROSS), A., 205; (VIRTANEN; MUELLER and H. J. and R. v. E. WIENER), A., 760; (BRUGSCH and HORSTERS), A., 1055; (VIALE), A., 1063.
- action of repeated doses of (WALTNER), A., 1179.
- influence of nickel and cobalt on the action of, in dogs and rabbits (BERTRAND and MACHEBOEUF), A., 869.
- convulsions from (WINTER), A., 979.
- effect of treatment with, on metabolism (HAWLEY and MURLIN), A., 1179.
- activation of (GLASER and HALPERN), A., 1278.
- effect of dextrose on activity of (MURLIN), A., 435.
- as co-enzyme (BRUGSCH and HORSTERS), A., 1179.

- Insulin**, in relation to co-enzyme (VIRTANEN and KARSTRÖM), A., 435; (FREUDENBERG and DIRSCHERL), A., 1179.
 standardisation of preparations of, with blood of albino rats (KARCZAG, MACLEOD, and ORR), A., 1180.
 influence of, on acetaldehyde formation (SUPNIEWSKI), A., 1179.
 action of acids, alkalis, and enzymes on (SHONLE and WALDO), A., 435.
 effect of anaesthetics and pituitrin on (LAMBIE), A., 869.
 effect of, on action of bacteria (KENDALL and ISHIKAWA), A., 868.
 action of, on constituents of blood (KAUFFMANN and ROCHE; GIGON), A., 1063.
 relation of, to blood-fat (WHITE), A., 205.
 effect of, on phosphorus of blood (BARRENSCHEEN and BEYER), A., 1270.
 on blood-sugar (HYND), A., 205; (JOHN), A., 979; (MÜLLER; HARRIS, LASKER, and RINGER), A., 1180.
 on carbohydrate metabolism (BISSINGER and LESSER), A., 436; (WIERZUCHOWSKI), A., 979.
 on cell respiration (BORN and IVANOVICS), A., 869.
 action of liver tissue and, on dextrose (LUNDGAARD and HOLBØLL), A., 861.
 action of muscle tissue and, on dextrose (ANDERSON and CARRUTHERS), A., 861; (BEARD and JERSEY), A., 1180.
 effect of, on dextrose consumption of muscle (BEST), A., 546.
 on fat of animals on vitamin-free diets (ONOHARA), A., 206.
 on fowls (CASSIDY, DWORIN, and FINNEY), A., 436.
 on liver glycogen (GREVENSTUK and LAQUEUR), A., 870; (FRANK, NOTHMANN, and HARTMANN), A., 1278.
 on glycogen and sugar formation in liver (BINDI; CHAIKOFF), A., 1063.
 from micro-organisms, effect of lactose on (WINTER and SMITH), A., 436.
 action of, on muscle dehydrogenase (BRUGSCH, HORSTERS, and NARITA), A., 198.
 effect of, on lactic acid content of muscle (BEST and MARKS), A., 870.
 content of, in pancreas in diabetes (POLLAK), A., 1054.
 effect of withdrawal of, on depancreatized dogs (CHAIKOFF, MACLEOD, MARKOWITZ, and SIMPSON), A., 643.
 and phloridzin diabetes (GAEBLER and MURLIN; NASH), A., 436.
 effect of, on phosphorus metabolism (KOŁODZIEJSKA and FUNK), A., 643.
 fate of sugar disappearing under the action of (BEST, HOET, and MARKS; BEST, DALE, HOET, and MARKS), A., 870.
 effect of, on carbon-nitrogen in urine (WADA), A., 760.
 biuret-free (ALLEN and MURLIN), A., 1063.
 crystalline (ABEL), A., 1063.
Insulin complement, properties of, and its occurrence in muscle (LUNDGAARD, HOLBØLL, and GOTTSCHALK), A., 1171.
 in muscles of animals (LUNDGAARD and HOLBØLL), A., 1064.
Interfaces, electrification at (FREUNDLICH; SCHOFIELD), A., 1094.
Interfacial tension and emulsification (HARKINS and ZOLLMAN), A., 239.
 of organic liquids against water and aqueous solutions (POUND), A., 789.
Interferometer, Zeiss-Löwe (BARTH), A., 779.
Interferometry (SCHAUM and BARTH), A., 914.
Intestine, chemistry of (BERGEM), A., 1170.
 gaseous equilibria in (MCIVOR, REDFIELD, and BENEDICT), A., 537.
 action of ammonium bases of meat extract on secretion by (KOMAROV), A., 430.
 action of local anaesthetics on (LASCH), A., 201.
 absorption of calcium salts from (IRVING), A., 972.
 influence of histamine on secretion of juice of (KOSKOWSKI), A., 319.
 isolated surviving, absorption from (LASCH and BRÜGEL), A., 972.
 small, relation of secretin to acid chyme in the (MELLANBY and HUGGETT), A., 436.
 absorption of electrolytes in the (MALKIEWICZ), A., 199.
Intestines, flora of, of infants and adults (KENDALL, DAY, and WALKER), A., 1062.
Intoxication (DAVIDSON), A., 91.
Innlase (PRINGSHEIM and PEREWOSKY), A., 641.
Innlins (PRINGSHEIM and PEREWOSKY), A., 641.
 molecular weight of (REIHLEN and NESTLE), A., 783.
 structure of, and its *hexa*-acetate (BERGMANN and KNEHE), A., 1230.
 determination of (CAMPBELL and HANNA), A., 1284.
Invertase (WILLSTÄTTER and LOWRY; WILLSTÄTTER, SCHNEIDER, and WENZEL), A., 321; (v. EULER and JOSEPHSON), A., 865.
 purification of, by electrodialysis (FRICKE, FISCHER, and BORCHERS), A., 791.
 effect of radium emanation on (HUSSEY and THOMPSON), A., 203.
 affinity relationships of (JOSEPHSON), A., 94, 865; (v. EULER and JOSEPHSON), A., 865.
 effect of pre-treatment of yeast on (v. EULER and JOSEPHSON), A., 544, 642.
 and antagonism of ions (HÖBER and SCHÜRMEYER), A., 322.
 kinetics of action of (MICHAELIS), A., 542.
 activation of, by spring-waters (MOUGEOT and AUBERTOT), A., 201.
 inactivation of (MYRBÄCK), A., 1174.
 by heat (v. EULER and JOSEPHSON), A., 542.
 retardation of action of, by dextrose and *l*-xylulose (NELSON and ANDERSON), A., 1059.
 protein nature of (WILLSTÄTTER), A., 976.
 hydrolysis of sucrose solutions by (ACHALME), A., 977.
 in presence of α -methylglucoside (NELSON and POST), A., 865.
 fate of, in the organism (SAMISSELOV), A., 202.
 determination of (RONA and NICOLAI), A., 868.
 separation of maltase and (WILLSTÄTTER and BAMANN), A., 433.
Invertebrates, mineral composition of skeletons of (SAMOILOV and TERENTJEVA), A., 1052.
Iodates, Iodic acid, and Iodides. See under Iodine.
Iodination of organic compounds (ZMAOZYNSKI), A., 604.
Iodine, occurrence of, in rocks and minerals (v. FELLEBERG and LUNDE), A., 1022.
 in the organism (MAURER and DIEZ), A., 1167.
 structure of (COLLINS), A., 333.
 preparation of, by electrolysis (PISARSHEVSKI and TELNI), B., 88.
 production of, in Chili (FAUST), B., 821.
 extraction of, from solutions (VELLARDI, and A.P.I.C.E. Soc. AN PROD. ITALIANI CHIMICI ESTRATTIVI), (P.), B., 916.
 absorption spectrum of (BRODE; NAKAMURA), A., 882.
 absorption spectrum and heat of dissociation of (KUHN), A., 1192.
 arc spectrum of (TURNER), A., 550.
 band spectra of (NAKAMURA), A., 882.
 resonance spectra of (KEMBLE and WITMER), A., 1191.
 ultra-violet arc spectrum of (MULLIKEN and TURNER), A., 1071.
 photochemistry of, and its potassium iodide solutions (PLOTNIKOV and KARSHULIN), A., 1014.
 photochemical reactions in presence of (MUKERJI and DHAR), A., 252.
 vapour, dissociation and fluorescence of (DYMOND), A., 10.
 oxidation potentials and equilibria of, with chlorine, hydrochloric acid, and water (FORBES, GLASS, and FUOSS), A., 128.
 electron affinity of (PICCARDI), A., 769.
 monatomic, collisions in (SMYTH), A., 1075.
 adsorption of (LOTTERMOSER and HERMANN), A., 898; (HAMY), A., 899.
 kinetics of (SYRKIN and BERNSTEIN), A., 581.
 loss of, from its alcoholic solutions (CARTER), B., 849.
 equilibrium between selenocyanogen and, and the corresponding silver salts (BIRCKENBACH and KELLERMANN), A., 30.
 solubility of, in aqueous hydriodic acid (HLASKO and KADENACOVNA), A., 897.
 influence of electrolytes on solubility of, in water (CARTER), A., 236.
 reaction of benzoyl peroxide with (ERLENMEYER), A., 1138.
 equilibrium of the reaction of, with bromine (MÜLLER; BODENSTEIN and SCHMIDT), A., 1100.
 ions, equilibrium of ferric ions with (LIALIKOV and BELA), A., 907.
 reaction between ferric salts and (PISARSHEVSKI), A., 914.
 reaction of ferrous salts with (JABŁCZYŃSKI and STÜCKGOLD), A., 913.
 velocity of reaction of formic acid with (HAMMICK and ZVEGINZOV), A., 691.
 reaction between hydrogen peroxide and (CHRISTIANSEN), A., 33.
 action of red phosphorus on, in organic solvents (TRAXLER and GERMAN), A., 696.
 action of, on organic silver salts (WIELAND and FISCHER), A., 46.
 complex compounds of starch and (SAMEC and KLEMEN), A., 22.
 behaviour of different starches towards (HUEBNER and VENKATARAMAN), B., 436.

- Iodine, oxidation of tervalent titanium by (YOST and ZABARO), A., 691.
 physiological function of, in plant cells (STOKLASA), A., 1182.
 as a biogenic element (BLEYER; NIKLAS, STROBEL, and SCHARRE; NIKLAS, SCHWAIBOLD, and SCHARRE), A., 638.
 effect of, on autolysis (STEFFEN and TIMOFEEVA), A., 976.
 metabolism. See Metabolism.
 storage of, in organs (v. FELLEBERG), A., 1052.
 standardisation of, with hydrazine sulphate (CATTELAINE), A., 489.
- Iodine trichloride, conductivity and electrolysis of, in acetic acid (BRUNS), A., 30.
- Hydriodic acid, preparation and determination of density of (MOLES and MIRAVALLS), A., 999.
 physico-chemical properties of (MIRAVALLS and MOLES), A., 340.
 ultra-violet absorption spectrum of (BONHOEFFER and STEINER), A., 991.
 ultra-violet absorption spectrum and photochemical decomposition of (TINGEY and GERKE), A., 882.
 photochemical decomposition of (BODENSTEIN and LIENEWEIG), A., 484.
 with the mercury-vapour lamp (TRAUTZ and SCHEFELE), A., 1013.
 dissociation in solutions of, saturated with iodine (HLASKO and KADENACOVNA), A., 897.
 catalytic decomposition of, on platinum (HINSHELWOOD and BURK), A., 133.
 kinetics of the reaction between iodic acid and (ABEL and STADLER), A., 1009.
- Iodides, iodine tensions of (JELLINEK and ULOTH), A., 463.
 equilibrium of the reaction of cupric salts on (KOLTHOFF), A., 255.
 recovery of, from iodine absorbed by charcoal (BOUWMAATSCHAPPE ARINA), (P.), B., 788.
 determination of, volumetrically (KOLTHOFF), A., 139; (ALSTERBERG), A., 374.
 determination of, with silver salts (KOLTHOFF), A., 38.
 determination of, in presence of other halides and cyanides (BERG), A., 1017.
- Iodic acid, equilibrium between hydrobromic acid and (SCHWICKER and SCHAY), A., 1007.
 kinetics of the reaction between hydriodic acid and (ABEL and STADLER), A., 1009.
 oxidising action of (FISCHER and WAGNER), A., 1215.
 oxidation of oxalic acid by (TODA; WIELAND and FISCHER), A., 806.
 effect of hydrocyanic acid on (WARBURG), A., 1011.
- Iodates, detection of (BICSKEI), A., 375.
- Iodine organic compounds, aromatic, reactions of (WILLGERODT), A., 158.
- Iodine determination :—
 determination of, microchemically (GRÖAK), A., 1163; (LUNDE), A., 1220.
 determination of, volumetrically (CATTELAINE), A., 1115; (HAHN and WOLF), A., 1220.
 determination of, in foodstuffs and body-fluids (LEITCH and HENDERSON), A., 1284.
 determination of, in starch iodide with the radiomicrometer (FIELD and BAAS-BECKING), A., 590.
 determination of, in organic compounds (GEITER), B., 768.
 determination of, in physiological material (v. BODÓ), A., 328.
 determination of, in natural waters (BRUBAKER, VAN BLARCOM, and WALKER), B., 630.
 determination of, in potable or drinking water (STEFFENS), B., 902.
- Iodine value, determination of (MARGOSCHES and NEUFFELD), B., 414; (AUSTEN), B., 447.
- of oils, Margosche's method for (STOCK), B., 20.
 of marine animal oils, rapid determination of (MARGOSCHES, FRIEDMANN, and FUCHS), B., 199.
 differential (MARGOSCHES and FUCHS), B., 371.
- Iodoform, crystal structure of (NITTA), A., 460.
 compounds of, with quaternary salts (STEINKOPF, ROCH, and SCHULTZ), A., 829.
- Iodometry, new end-point in (FOULK and BAWDEN), A., 927.
- Ions, size of (GRIMM and WOLFF), A., 664; (GRIMM), A., 1078.
 relative sizes of atoms and (BRUNETTI; DAVEY), A., 107.
 diameters of, of the same element having different charges (FERRARI), A., 781.
- Ions, forces between (LENNARD-JONES), A., 11; (BJERRUM), A., 1101.
 forces between atoms and (LENNARD-JONES and DENT), A., 888.
 theory of mobility of (HASSE), A., 219.
 mobility of, in air (TYNDALL and GRINDLEY), A., 219; (TYNDALL and PHILLIPS), A., 877.
 in argon (LAPORTE and DA SILVA), A., 877.
 in gases (LOEB), A., 449; (LAPORTE), A., 449, 877.
 in liquids (CASSEN), A., 1104.
 influence of chlorine on, in oxygen (MAYER), A., 878.
 independence of mobility and mass of (ERIKSON), A., 1074.
 emission of, by heated salts (SCHMIDT), A., 877.
 thermionic emission of, equations for (FREEDMAN), A., 877.
 measurement of free energy of (TAYLOR), A., 29.
 free energy of hydration of (WEBB), A., 1008, 1208.
 adsorption of (AUDUBERT and QUINTIN), A., 347.
 at water surfaces (FRUMKIN, REICHSTEIN, and KULVARSKAJA), A., 1091.
 and their coagulative power (SEN), A., 794.
 coagulation by, in relation to their radii and valency (LACHS and LACHMANN), A., 1099.
 velocity of migration of, in solutions (GREBE), A., 1104.
 interaction of (GÜNTELEBERG), A., 1207.
 antagonism of (SEN), A., 573; (BELAK and SZEP), A., 907.
 aqueous, entropy of (LATIMER and BUFFINGTON), A., 1102.
 electrolytic. See Electrolytic ions.
 gaseous, produced by α -particles, chemical action of (LIND and BARDWELL), A., 4, 770, 1077; (LIND, BARDWELL, and PERRY), 769.
 energy of combination of (HILDEBRAND), A., 1189.
 energy of solution of, in relation to the effect of a charge on the dielectric (LATIMER), A., 684.
 isosteric isomeric, relative stabilities of (PAULING and HENDRICKS), A., 458.
 negative, mobility of, in hydrogen and petroleum flames (BOUCHER), A., 105.
 positive, new source of (KUNSMAN), A., 218.
 from mixtures of metallic oxides (BARTON, HARNWELL, and KUNSMAN), A., 769.
 tervalent, activity coefficients of, in dilute solutions (BRÖNSTED and BRUMBAUGH), A., 907.
- Ionisation by monochromatic ultra-violet light (LITTLE), A., 1075.
 by electron collisions (MOHLER), A., 4.
 effect of radiation on equilibrium of (SAHA and SUR), A., 774.
 of strong electrolytes (DAWSON and CARTER), A., 244.
 of weak electrolytes in aqueous-alcoholic solutions (MIZUTANI), A., 125.
 of gases by X-rays and cathode rays (KULENKAMPFF), A., 769.
 by electron impacts (COMPTON and VAN VOORHIS), A., 769.
 effects of knock inducers and suppressors on (CLARK, BRUGMANN, and THEE), B., 83.
 in reacting gases (BREWER), A., 1074.
 natural, in gases (BROXON), A., 656.
 residual, of gases (MERRYMON), A., 772.
- Ionisation contents of moderately ionised acids (SHERRILL and NOYES), A., 1006.
 of dibasic acids (LARSSON), A., 1007.
- Ionisation gauge, direct reading (FOUND and REYNOLDS), A., 1020.
- Ionisation potentials by positive-ion impact (HOOPER), A., 448.
 refractivity, and absorption spectra (MORTON and RIDING), A., 558.
 and periodic system of elements (ROLLA and PICCARDI), A., 1187.
- Ionium, life-period of (KOBLEC), A., 105.
- Ipecacuanha alkaloids, dyes from (PYMAN; PALKIN and WALES), A., 531.
- Ipecacuanha root, determination of alkaloids in (FIGDOR), B., 383.
- Iridic acid, synthesis of (MAUTNER), A., 1038.
- Iridium, absorption spectrum of (MEGGERS and LAPORTE), A., 1193.
- Iridium organic compounds :—
 Iridium chloropicolines (GUILLLOT), A., 958.
- Iridium separation :—
 separation of, from iron (SCHOELLER), A., 931.
 separation of, from rhodium and platinum (WADA and NAKAZONO), A., 141.
- Iron, manufacture of (FLÖSSEL and EISEN- & STAHLWERKE HOESCH), (P.), A., 754.
 direct production of (TOURNIÉ, P.), B., 195.

- Iron, production of, in blast furnaces (HALBERGERHÜTTE), (P.), B., 162.
 influence of oxidation reactions on (WÜRT), B., 919.
 from blast-furnace dust, burnt pyrites, and other waste materials (SCHREGER), (P.), B., 196.
 from its ores (FLODIN, GUSTAFSON, and CORNELIUS), (P.), B., 635.
 from silicates and pyrites (TAMMANN and BÄTZ), B., 277.
 and its alloys, production of, from ores (HEULAND; BLANCHET), (P.), B., 673.
 electrodeposition of, from fused electrolytes (SAUERWALD and NEVENDORFF), B., 131.
 from ores (OKOCHI, HANAOKA, and ZAIDAN HOJIN RIKAGAKU KENKYUJO), (P.), B., 547.
 with carbon, from its organic salts (SCHMIDT), A., 248.
 purification of (BURGERS), (P.), B., 634; (EVANS and MATHIESON ALKALI WORKS), (P.), B., 753, 833*; (EVANS), (P.), B., 832.
 spectroscopic testing of metal bath in refining of, in the electric furnace (FELTEN & GUILLEAUME CARLSWERK A.-G.), (P.), B., 329.
 annealing articles of (GRAFTON and WEESNER), (P.), B., 283.
 blackening and burnishing of (MEYSAHN), B., 1016.
 carburisation of (PHILLIPS), (P.), B., 96.
 and its alloys, carburisation of (MERTEN; MARTIN), A., 982.
 carburisation and decarburisation of (JOHANSSON and v. SETH), B., 826.
 casting of, in permanent molds with regulated cooling (MELOCHE and HOLLEY), (P.), B., 921*.
 cementation of, by silicon chloride (SANFOURCHE), B., 1017.
 and its alloys, furnaces for use in cementation of (FISHER and CHAMBERS), (P.), B., 675*.
 cementation of, by tungsten (LAISSUS), B., 278.
 cleaning of, by electrolysis (LEE and STUDEBAKER CORP.), (P.), B., 1018.
 decarbonisation of (SOC. DES ACIÉRIES ET FORGES DE FIRMINY), (P.), B., 162.
 graphitisation of, at constant temperature (SWARTZ), B., 981.
 welding of (HUMPHRIES and METALS PROTECTION CORP.), (P.), B., 163.
 influence of strain and heat on hardness of (SAUVEUR and LEE), B., 131*.
 tensile properties of single crystals of (EDWARDS and PFEIL), B., 161*.
 effect of occluded hydrogen on the tensile strength of (PFEIL), B., 790.
 effect of temperature on notched-bar impact test of (GREAVES and JONES), B., 162*.
 structural relations between various forms of (FLETCHER), A., 466.
 A3 and A4 transformations in (SATO), A., 669.
 dilatometric investigation of A3 and A4 transformations in (SATÔ), B., 324.
 spectrum and atomic structure of (SUR), A., 329.
 spectrum of (NAGAOKA and SUGIURA), A., 102; (VAN MILAAN), A., 102, 986.
 wave-length standards for (MONK), A., 650, 1185.
 fundamental lower level of (LAPORTE), A., 650.
 absorption spectrum of (SUR), A., 334.
 high-current arc spectrum of (KING), A., 1070.
 arc and spark spectra of (L. and E. BLOCH), A., 650.
 M-series spectrum of (STUHLMAN), A., 1072.
 scattering of X-rays by (CLAASSEN), A., 1072.
 magnetic properties of crystals of (GERLACH), A., 230; (HONDA, KAYA, and MASUYAMA; WEBSTER), A., 665.
 magnetic changes in (DEARDEN and BENEDICKS), A., 566.
 magnetic moment of (STONER), A., 1189.
 magnetostriiction of (FORRER), A., 1189.
 and its alloys with nickel, magnetostriiction in (McKEEHAN and CIOFFI), A., 891; (McKEEHAN), A., 892.
 electrical resistance of (MEISSNER), A., 1086.
 Hall effect in films of (PEACOCK), A., 565.
 effect of rapidly alternating currents on (JAEGER and MEISSNER), A., 566.
 critical potentials of (THOMAS), A., 104, 1073; (PETRY; CHU), A., 1073.
 electrode potential of (HAMPTON), A., 803.
 series and ionisation potentials in the spectrum of (LAPORTE), A., 988.
 secondary electrons from (FARNSWORTH), A., 552.
 melting of (DYER), (P.), B., 710, 1017.
- Iron, molten, increasing the fluidity of (PACZ), (P.), B., 984.
 pure, refractories for melting (JORDAN, PETERSON, and PHELPS), B., 951.
 flow of, under stress (LODE), A., 666.
 allotropy of (WEVER), B., 15.
 polymorphism of (BREDEMEIER), A., 462.
 single crystals of (GERLAOH), A., 1196.
 crystals, magnetisation curves of (GERLACH), A., 1085.
 distortion of (TAYLOR and ELAM), A., 997.
 dialysed, birefringence and Avogadro's number of solutions of (TIERT), A., 12.
 and its oxide, evaporation of water from (BHATNAGAR and BHATIA), A., 900.
 diffusion of chromium into (GRUBE and v. FLEISCHBEIN), B., 749.
 penetration of hydrogen through (KNOBEL and NORTON), A., 479.
 absorption of nitrogen by, in the basic open-hearth process, (SCHULZ and FRERICH), B., 670.
 eutectoid of carbon and (RUER), B., 748.
 and its oxides, equilibria of, with carbon and its oxides (FALCKE and FISCHER), A., 684; (SCHENCK), B., 633.
 equilibria of, with copper and with tin in the molten state (RUER and KUSCHMANN), A., 786.
 equilibrium of oxygen and (SCHÖNERT), B., 749.
 oxidation of (HOFMANN), B., 748.
 by air in presence of iron salts (FIREMAN), B., 373.
 deoxidation of (TAFEL), (P.), B., 162, 164*.
 dephosphorisation of (SCOTT and PEACOCK), (P.), B., 196.
 desulphurisation of (EHRENBERG and others), (P.), B., 62; (KROLL), (P.), B., 162; (EVANS and MATHIESON ALKALI WORKS), (P.), B., 675*.
 pickling of, with hydrochloric and sulphuric acids (BABLIK), B., 443.
 passivity of, from action of dilute nitric acid (FUJIHARA), B., 194.
 passivity and corrosion of (McCULLOCH), B., 949.
 corrosion of (KISTIAKOVSKI), B., 131; (WHITMAN), B., 282*; (GIRARD), B., 881.
 by nitric and sulphuric acids (BATE), B., 982.
 corrosion of specimens of, from Auckland, Colombo, Halifax, and Plymouth (CROSTIWAITE), B., 882.
 protection of, against corrosion (COSLETT), (P.), B., 283; (BENNETT and MURRAY), (P.), B., 495.
 by cadmium (RAWDON), B., 243.
 nature of protective film on (FUJIHARA), B., 243.
 rust-proofing bath for (GRAVELL), (P.), B., 329.
 influence of alternating currents on electrolytic corrosion of (ALLMAND and BARKLIE), B., 277, 497*.
 concentration of hydrogen-ions in water in relation to corrosion of (BAYLIS), B., 493.
 origin of corrosion pits in (LIEBREICH), B., 57.
 electrolytic treatment of, prior to plating (MADSENELL CORP.), (P.), B., 444.
 coating surfaces of (MADSEN and MADSENELL CORP.), (P.), B., 97.
 and its alloys, coating of, with chromium (KYROPOULOS), (P.), B., 711.
 coating of, with lead (HILL), (P.), B., 590.
 with tin-aluminium alloy (KOCHLINE), (P.), B., 832.
 electroplating of, with nickel (KING and HANSON & VAN WINKLE Co.), (P.), B., 132.
 galvanising of (HILL), (P.), B., 590.
 behaviour of aluminium towards, at high temperatures (IRMAN), B., 544.
 replacement of caesium and rubidium by (HACKSPILL and PINCK), A., 1015.
 effect of nitrogen on, and its alloys with chromium (ADCOCK), B., 829.
 reaction regions for mixtures of, with sulphur and silica, aluminium or magnesium (JORISSEN and ONGKIEHONG), A., 909.
 etching mixtures for (HEINRICH and VOIGT), A., 707.
 etching agent for silicon in (OBERHOFFER), B., 881.
 removal of, from amalgams (RUSSELL, EVANS, and ROWELL), A., 911.
 from ferrous materials (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 883.
 from leucitic rocks (POMILIO, GIORDANI, and POMILIO BROS. CORP.), (P.), B., 13.

- Iron, recovery of sulphur and, from sulphide ores (CONDER), (P.), B., 196.**
 recovery of sulphur, copper, and, from sulphide ores (PIKE), (P.), B., 245.
 solder for joining lead alloys to (METALL-VERARBEITUNGSGES.), (P.), B., 331.
 macroscopical examination of (GILLIGAN and CURRAN), B., 919.
 content of, in meats (FORBES and SWIFT), A., 538.
 in mineral waters, stabilisation of (GERARD), (P.), B., 383.
 oxidisability of, in wines (WOLFF and GRANDCHAMP), B., 104.
 potassium and ferrie ferrocyanides as sources of, for plants (DEUBER), B., 458.
 catalytic and peroxydatic properties of, in relation to its mode of combination (KUHN and BRAUN), A., 1215.
 metabolism of. See under Metabolism.
- Iron, ancient (FRIEND), B., 131*.**
 cast, manufacture of (HENDERSON and DRIVER-HARRIS Co.), (P.), B., 368.
 production of (MEIER and WEICHEL), (P.), B., 952.
 production of high-grade, in the electric furnace (v. KERPELY), B., 92.
 effect of scrap in production of (BORMANN), B., 130.
 purification of (PLATON), (P.), B., 162.
 magnetic and electrical properties of (PARTRIDGE), B., 162*.
 influence of prolonged heating on crystallisation of combined carbon in (WEDEMAYER), B., 544.
 dilatation of, during repeated heating and cooling (ANDREW and HIGGINS), B., 162*.
 change of volume of, on solidification (HONDA and ENDO), A., 897.
 influence of casting temperature and annealing on phosphide eutectic in (JUNGBLUTH and GUMMENT), B., 588.
 decarbonisation of (MARTIN and BERTELS), (P.), B., 132.
 formation of graphite scum in (OSANN), B., 919.
 action of salt solutions on (GIRARD), A., 926.
 corrosion of, in sulphuric acid (DELBART), B., 56.
 testing of, previous to casting (WOLFF), B., 544.
 casting of articles of, of varying thickness (BRITISH PERLIT IRON Co.), (P.), B., 756.
 coating of, with lead (SENGLER), (P.), B., 1018.
 grey (SIPP and LANZ) (P.), B., 97*.
 melting of, in the electric furnace (RICHARDS), B., 324.
 heat treatment of (SCHAAF), (P.), B., 164*.
 low in phosphorus (UNION DE CONSOMMATEURS DE PROD. METALL. ET IND.), (P.), B., 245.
 malleable (MILES), (P.), B., 132; (FLETCHER, PEARCE, and BRITISH CAST IRON RESEARCH ASSOC.), (P.), B., 1017.
 thermal treatment of molten iron in production of (PIVOVARSKI), B., 91.
 prevention of embrittlement in (MARSHALL), B., 490.
 graphitisation of (KIKUTA), B., 669.
- catalytic, structure of (WYCKOFF and CRITTENDEN), A., 112.**
electrolytic, manufacture of ("LE FER" Soc.), (P.), B., 18*;
 (SIEMENS & HALSKE and GERDIEN), (P.), B., 163.
 apparatus for production of (SIEMENS & HALSKE and DUHME), B., 62, 445*.
 from ilmenite ores (MONK and TRAILL), B., 670.
 from iron sulphide ores (TRAILL and McCLELLAND), B., 670.
 properties of (FULLER), B., 949.
 comparative cold-rolling tests on open-hearth steel and (FREEMAN and FRANCE), B., 57.
 thermal treatment of, and gases evolved from, in a vacuum (HUGUES), B., 159.
 cold-rolled, recrystallisation temperatures of (FREEMAN), B., 919.
 malleable, manufacture of (LINKE-HOFMANN-LAUCHHAMMER A.-G. and WIEGAND), (P.), B., 329; (WILLIAMS, BOEGE-HOLD and GEN. MOTORS RESEARCH CORP.), (P.), B., 753.
 from ores (BURGERS and KINTZINGER), (P.), B., 412.
 meteoric. See Meteoric iron.
- pig, manufacture of (DAVIES), (P.), B., 711*.**
 influence of blast-furnace temperature on properties of (WAGNER), B., 748.
 change in volume of, on melting (SAUERWALD and WECKER), B., 131.
 pre-melting of, for use in the scrap-pig iron steel process in Siemens-Martin furnaces (HERZOG), B., 410.
 white and grey, density and expansion of (SAUERWALD and VIDAVSKI), A., 999.
 press-matrix, production of, in the converter (JUNG), B., 56.
- Iron, pyrophoric, adsorption of hydrogen and carbon dioxide by (NIKITIN), A., 673.**
 rolled, crystal structure of (KONOBEJEVSKI), A., 1195.
 rustless, manufacture of (BECKET), (P.), B., 195.
 electroplating on (HAAS and UNRUH), B., 242.
 electrolytic production of an adherent burnish on (PFANHAUSER and LANGBEIN-PFANHAUSER-WERKE A.-G.), (P.), B., 921.
 "saccharated," adsorption of arsenious acid by (HERBOTH), A., 468.
 sheet, rate of pickling of (HANSEN and LINDSEY), B., 825.
 silicon-, influence of grain size on magnetic properties of (v. AUWERS), B., 15.
 stainless, manufacture of (AKTIEBOLAGET FERROLEGERINGAR), (P.), B., 196; (WILD and RUSTLESS IRON CORP. OF AMERICA), (P.), B., 635; (JOHNSON), (P.), B., 753.
 strained, orientation of crystals produced by heating of (ELAM), B., 162*.
 tinned, detinning scrap of (DAVIES and ADAM), (P.), B., 97*.
 wrought, phosphorus in (RAWDON and EPSTEIN), B., 669.
- Iron alloys, manufacture of (SAKLATWALLA), (P.), B., 96; (T. G. & F. E. L. STIG), (P.), B., 246*;** (CORNELIUS), (P.), B., 753; (BERLIN and AKTIEB. FERROLEGERINGAR), (P.), B., 756*.
 specific heat of (KAWAKAMI), B., 671.
 cementation of, with aluminium (COURNOT), B., 365, 633.
 by chromium (LAISSUS), B., 443.
 by tungsten (LAISSUS), B., 633.
 by tungsten, molybdenum, and tantalum (LAISSUS), B., 545.
 limiting states of (GRENET), A., 1199.
 decomposition of (CROTOGINO), (P.), B., 884.
 ferrous (SAKLATWALLA), (P.), B., 1018*.
 heat-resisting (HYBINETTE), (P.), B., 96.
 resistant-surface (CHARLS and UNITED ALLOY STEEL CORP.), (P.), B., 17.
 rustless (FLODIN and GUSTAFSSON), (P.), B., 1018.
 technical, determination of large quantities of manganese in, volumetrically (HECZKO), B., 791.
 with aluminium, solidification of (MASINO and DAHL), B., 882.
 with boron (PACZ and GEN. ELECTRIC Co.), (P.), B., 18*.
 with carbon, magnetism and specific resistance of (CAMPBELL), A., 17.
 influence of heat treatment and carbon content on the structure of (FINK and CAMPBELL), B., 919.
 equilibrium of (HONDA), B., 672*.
 A2 line in equilibrium diagram of (HONDA), B., 194.
 solidus line in equilibrium diagram of (KAYA), B., 325.
 dendritic segregation in (SAUVEUR and KRIVOBOK), B., 131*.
 with carbon and chromium (MEIERLING and DENECKE), A., 357; (v. VEGESACK), A., 799; (SAKLATWALLA), (P.), B., 884.
 with carbon and copper (ISHIWARA, YONEKURA, and ISHIGAKI), A., 683.
 with carbon and with nickel, Widmannstätten structure in (KASÉ), B., 277.
 with carbon and silicon at high temperatures (BECKER), B., 132*.
 with chromium (WEIDENTHAL and HERRON Co.; WARGÖNS-AKTIEB.), (P.), B., 753; (BAIN), B., 828.
 with chromium and silicon (DENECKE), A., 909.
 refining of (SAKLATWALLA), (P.), B., 884.
 with cobalt, and with nickel (GRENET), B., 132*.
 with cobalt, with nickel, and with silicon, temperature-composition diagrams of (GRENET), A., 339.
 with copper, treatment of (PEDERSEN and ORKLA GRUBE-AKTIEBOLAG), (P.), B., 64*.
 with iron sulphide (BOGITCH), B., 194.
 with mercury, potential of (HEYROVSKÝ and SOUČEK), A., 910.
 with nickel (WHITE and WESTERN ELECTRIC Co.), (P.), B., 635*.
 lattice constant and density of (ŌSAWA), A., 564.
 magnetic properties of (TSCHERNING), B., 58.
 physico-chemical equilibrium of (PESCHARD), B., 58.
 equilibrium diagram of (GRENET), B., 443.
 recovery of, from rolling-mill scale (STERN), (P.), B., 330.
 magnetic (WESTERN ELECTRIC Co.), (P.), B., 244.
 non-oxidising (SPITZLEY, THOMPSON, and ALLOYS FOUNDRY Co.), (P.), B., 673.
 reversible, resistivity and thermo-electric power of (CHEVENARD), B., 588.
 See also Permalloy.
 with silicon (PHRAGMÉN), B., 828.

- Iron alloys with silicon, influence of grain size on magnetic properties of (V. AUWERS), B., 324.
 production of castings of (RHEINISCHE EISENGIESSEREI U. MASCHINENFABR.), (P.), B., 282.
 etching colours on (KÖRBER), B., 749.
 acid-resistant (FISCHER), (P.), B., 547.
 magnetic (BROWNE), (P.), B., 282.
 with tin (WEVER and REINECKEN), A., 475.
 See also Ferrocromium, Ferrovandium, and Ferrozirconium.
- Iron compounds in rocks and minerals (MACCARTHY), A., 265.
 in various animals (FONTÈS and THIVOLLE), A., 424.
 precipitation of (MILLER), B., 29.
 coloured, in minerals and rocks (MACCARTHY), A., 933.
 soluble, relation between colloids and, in residual clays (MACCARTHY), B., 207.
 separation of, from mixtures containing iron oxide (KÖNIGSBERGER ZELLSTOFF. FABR. & CHEM. WERKE KOHLYT), (P.), B., 744.
- Iron salts in culture solutions (MARSH), A., 209.
 absorption of, by soils (DOYNE and MORISON), B., 958.
 effect of, on anaemia (WILLIAMSON and ETS), A., 196.
- Iron carbide, free energy and heat of formation of (MAXWELL and HAYES), A., 463.
 complex fluoro-salts (WEINLAND, LANG, and FIKENTSCHER), A., 136.
 hydrides (WEIOHSELFELDER and THIEDE), A., 373.
 hydroxide, colloidal sols, swelling value of (HAKOZAKI), A., 1005.
 oxide, recovery of, from ores (KALMUS, COMSTOCK, and WESCOTT), (P.), B., 756.
 emission of positive ions by mixtures of alkali or alkaline-earth oxides with (BARTON, HARNWELL, and KUNSMAN), A., 769.
 artificial (*colcothar, red ochre*), manufacture of, free from acid (HEDDERNHEIMER KUPFERWERK & SÜDDEUTS. KABELWERKE and KIRCHNER), (P.), B., 202.
 finely divided, production of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 321.
 pigments. See under Pigments.
- oxides, crystal structure of (WYCKOFF and CRITTENDEN), A., 112.
 phosphate as plant nutrient (MÜNTER), B., 763.
 phosphates, equilibria of (CARTER and HARTSHORNE), A., 358.
 silicides (KÖRBER), B., 753.
 sulphate, crystalline, production of (AGDE), (P.), B., 915.
 sulphide, action of steam and hydrogen on (FISCHER and TROPSCH), B., 874.
- Ferric salts, state of, in solution (TANANAEV), A., 240.
 reduction of, with hydrogen sulphide (MOLDENHAUER and MISCHKE), A., 691.
 reaction between iodine and (PISARSHEVSKI), A., 914.
 determination of, colorimetrically (VAN URK), A., 1019.
 determination of, with titanous sulphate (SOMEYA), A., 705.
- Ferric ions, equilibrium of iodine ions with (LIALIKOV and BELA), A., 907.
- Ferric chloride, manufacture of (TYRER), (P.), B., 360.
 solution of copper in aqueous (BEKIER and TRZECIAK), A., 482.
 reaction of hydroxylamine with (MITCHELL), A., 580.
 chloride and oxide, equilibrium of water and (BAUR), A., 1102.
 hydroxide, structure of (BÖHM), A., 113.
 dialysed, preparation of (FABRE and PENAU), A., 791.
 sols, precipitation of, by electrolytes (TAKAMATSU; TAYLOR), A., 472.
 viscosity and hydrogen-ion concentration of (YOE and FREYER), A., 1203.
- hydroxide and ferric magnesium hydroxide gels, adsorption of arsenious oxide by (CLAUVERA), A., 672.
 oxide, production of (NEILL), (P.), B., 584.
 luminescence of (WÖHLER), A., 335.
 and its hydrates, magnetic properties of (WEDEKIND and ALBRECHT), A., 1196.
 effect of heat on (BLANC), A., 1205.
 adsorption of ammonia by (NIKITIN), A., 1002.
 adsorption of ethylene and hydrogen by (LAZIER and ADKINS), A., 467.
 equilibrium of calcium oxide, silica, and (HANSEN and BOGUE), A., 684.
- 19
- Iron:—
 Ferric oxide sols, effect of dialysis on ageing of (HANDOVSKY), A., 23.
 sol-gel transformation of (FREUNDLICH and ROSENTHAL), A., 905.
 reduction of, by hydrogen (KAMURA), B., 131*.
 influence of, on pure clays (KUEHLER), B., 361.
- Triferria tetroxide, active and inactive, effect of, on the urinary quotient (WADA), A., 1057.
 fused, positive ions from (KUNSMAN), A., 218.
- Ferric alkali phosphites and pyrophosphates (ROSENHEIM, FROMMER, GLÄSER, and HÄNDLER), A., 696.
 sulphate, equilibria of, with bases (KRAUSE), A., 683.
 treatment of acid solutions containing titanium sulphate and (RADIIUM & RARE EARTHS TREATMENT Co. and COOKE), (P.), B., 744.
- Ferrous compounds, decomposition of water by, in presence of palladium (TRAUBE and LANGE), A., 257.
- Ferrous salts, oxidation of mixtures of ammonium oxalate and (ONO), A., 926.
 reaction of iodine with (JABECZYŃSKI and STÜCKOLD), A., 913.
- Ferrous carbonate, roasting of ores containing (AFOLD and FLEISSNER), (P.), B., 710.
 fluoroborate (FUNK and BINDER), A., 1015.
 fluoride, crystal structure of (FERRARI), A., 664.
 oxide, preparation and crystal structure of (WYCKOFF and CRITTENDEN), A., 113.
 equilibria in systems involving (FERGUSON), B., 367*.
 determination of, in insoluble silicates (HACKL), A., 40.
 alkali pyrophosphates (ROSENHEIM, FROMMER, GLÄSER, and HÄNDLER), A., 696.
 sulphate, equilibrium of aluminium sulphate, water, and (OCCLESHAW), A., 26.
 separation of copper sulphate and, by crystallisation (AODE and BARKHOLT), B., 707.
 sulphide, equilibrium of copper sulphide, sulphur, and (TIEDEMANN), B., 710.
 reaction of manganese with (HERTY and TRUE), A., 488.
 See also Pyrrhotin.
- Ferrites, thermomagnetic properties of (FORESTIER and CHAUDRON), A., 566.
- Iron organic compounds, complex, with phenanthrene and pyridine derivatives, properties of (FREUNDLICH and BIRSTEIN), A., 1095.
- Iron carbonyl, manufacture of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 191, 487, 1013; (I. G. FARBERIND.), (P.), B., 439.
 purification of gases from (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 351.
 mixtures containing, as motor fuels (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 309.
 as anti-knocking agent (OSTWALD), B., 571.
- Ferric acetates and propionates, complex (WEINLAND and HÖRN), A., 711.
 guanidine alum (CANNERT), A., 55.
- Ferroates, complex (KÜSTER, ERFLE, v. ROLL, and SCHILLER), A., 821.
- Steel (MCGUIRE), (P.), B., 1018.
 fifty years' progress in (MATHEWS), B., 832.
 manufacture of (LINKE-HOFMANN-LEUCHHAMMER A.-G. and WIEGAND; SOC. PROC. METALL. CONSTANT-BRUZAO), (P.) B., 329; (BRÜNINGHAUS), (P.), B., 370*; (BRAY), (P.), B., 589; (FLÖSSEL and EISEN- & STAHLWERKE HOESCH), (P.), B., 754; (BOSSHARDT), (P.), B., 883.
 direct process for (FLODIN), B., 162*; (TOURNIÉ), (P.), B., 195.
 direct production of, from ores (BURGERS and KINTZINGER), (P.), B., 412.
 physical chemistry in manufacture of (HADFIELD; FEILD), B., 367*.
 equilibria in manufacture of (M'CANCE), B., 364.
 chemical reactions in manufacture of, by the basic electric furnace process (SISCO), B., 367*.
 manufacture of, by the open-hearth process (JONES and LITZ), (P.), B., 368; (DIEHL), B., 670.
 equilibrium of manganese, carbon, and phosphorus in the basic open-hearth process for (HERTZ), B., 490.
 pre-melting pig-iron for the scrap pig-iron process for (HERZOG), B., 410.
 heat equilibrium and temperature in Thomas process for (BANSSEN), B., 981.

Iron:—

- Steel, use of oxygen-enriched blast in manufacture of, by Thomas process (HAAO), B., 56.
 carbon elimination in the Martin furnace for (DE LOISY), B., 880.
 refining of (KILBY and SPALTON; MATTICE), (P.), B., 61; (KRUPP and SCHOTTKY), (P.), B., 162.
 electrothermic refining of (DIXON and PITTSBURGH RESEARCH CORP.), (P.), B., 329.
 basic hearth refining process compared with the Thomas process for the manufacture of (BERNHARDT), B., 442.
 recovery of, from ores and scrap (BLANCHET), (P.), B., 673.
 high-power metallography of (LUCAS), B., 280, 281.
 dendritic structure and crystal formation in (STOUGHTON and DUCK), B., 919.
 retained austenite in (MATHEWS), B., 132*.
 effect of manganese, phosphorus, and silicon on the pearlite interval in (KJERRMAN), B., 949.
 determination of heat of precipitation of cementite from α - and β -martensites in (KAWAKAMI), B., 325.
 effect of some elements on spheroidisation of carbides in (ISHIHARA), B., 92.
 effect of other elements on migration of carbon in (MAHIN, SPENCER, and HAYNER), B., 364.
 elastic limit and hot shortness of (LUDWIK), B., 544.
 variation of impact resistance of, with temperature (COURNOT and SASAGAWA), B., 131.
 influence of cathodic hydrogen on strength of (ALEXEJEV and POLUKAROV), B., 550.
 tension and notched-bar tests for (HONDA), B., 832.
 effect of temperature on notched-bar impact test of (GREAVES and JONES), B., 162*.
 hardening of (SALERNI), (P.), B., 1018.
 case-hardening of, by formation of nitrides (GUILLET), B., 410.
 hardness of different structures in (TAMARU), B., 881.
 influence of strain and heat on hardness of (SAUVEUR and LEE), B., 131*.
 tensile properties of, at high temperatures (LYNCH, MOCHEL, and McVETTY), B., 544.
 relation between tensile strength and hardness of (GREAVES and JONES), B., 491, 883*.
 caustic embrittlement of (PARR and STRAUB), B., 1016.
 temper-brittleness of (ANDREW and DICKIE), B., 826.
 cleaning of, by electrolysis (LEE and STUDEBAKER CORP.), (P.), B., 1018.
 heat treatment of (BUDD MANUF. CO.), (P.), B., 411; (HARDER, DOWDELL, and FORSYTH), B., 950.
 quenching of (FRENCH and KLOPPCH), B., 826.
 origin of quenching cracks in (SCOTT), B., 749.
 tempering of (VAN METER), (P.), B., 444.
 treatment of, with ferro-carbon-titanium (COMSTOCK), B., 826.
 welding of (HUMPHRIES and METALS PROTECTION CORP.), (P.), B., 163; (DOAN), (P.), B., 883.
 physical properties of, and their determination (ANDREW, FISHER, and ROBERTSON), B., 242.
 influence of silicon on magnetic properties of (DAEVES), B., 983.
 magnetic changes in (DEARDEN and BENEDICKS), A., 566.
 self-magnetisation of, under torsion (CAZAUD), B., 277.
 moduli of elasticity and rigidity and changes caused by magnetisation in (HONDA and TANAKA), B., 545.
 thermal and electrical conductivity of varieties of (BENEDICKS, BÄCKSTRÖM, and SEDERHOLM), A., 828.
 specific resistance and thermoelectric potential of (CAMPBELL and MOHR), A., 566.
 molten, increasing the fluidity of (PACZ), (P.), B., 984.
 abnormal absorption of gases by (SUTTON and AMBLER), B., 1016.
 carburisation of, by solid cement (DAY), B., 881.
 decarbonisation of (Soc. DES ACIÉRIES ET FORGES DE FIRMINY), (P.), B., 162.
 surface decarbonisation of (JOHANSSON and V. SETH), B., 826.
 degasification and deoxidation of (PEACOCK and COOK), (P.), B., 283.
 deoxidation of (TAFEL), (P.), B., 162, 164*.
 dephosphorisation of (SCOTT and PEACOCK), (P.), B., 196.
 desulphurisation of (KROLL), (P.), B., 162.
 corrosion of (GIRARD), B., 881.
 by acids (DUFFER), B., 949.
 by nitric and sulphuric acids (BATE), B., 982.

Iron:—

- Steel, corrosion in the atmosphere (WHITMAN and CHAPPELL), B., 545.
 corrosion of specimens of, from Auckland, Colombo, Halifax, and Plymouth (CROSTHWAITE), B., 882.
 treatment of, to prevent rusting (COSLETT), (P.), B., 283.
 rust-proofing bath for (GRAVELL), (P.), B., 329.
 coating surfaces of (MADSEN and MADSENELL CORP.), (P.), B., 97.
 coating of, with tin-aluminium alloy (KOEHLIN), (P.), B., 832.
 electrolytic treatment of, prior to plating (MADSENELL CORP.), (P.), B., 444.
 macroscopical examination of (GILLIGAN and CURRAN), B., 919.
 etching mixtures for (HEINRICH and VOIGT), A., 707.
 effects of arsenic on (CAMERON and WATERHOUSE), B., 491, 883*.
 cementation of, by silicon (GUILLET), B., 670.
 action of salt solutions on (GIRARD), A., 926.
 determination of carbon in, as carbon dioxide (HACKSPILL and D'HUART), A., 374.
 determination of cerium in special kinds of (SWOBODA and HORNY), B., 242.
 determination of gases in (KLINGER), B., 983.
 determination of phosphorus in, containing tungsten (ROONEY and CLARK), B., 883*.
 determination of sulphur in (KLING and LASSIEUR), B., 588.
 Steel, acid electric, qualitative and economic importance of (MÜLLER-HAUFF), B., 442.
 for aeroplane engine valves (GRARD), B., 92.
 alloy (MEE), (P.), B., 244; (WOODSIDE, DAWE, and STUDEBAKER CORP.), (P.), B., 283; (STRAUSS and KRUPP), (P.), B., 635*; (HEPPENSTALL and HEPPENSTALL FORGE & KNIFE CO.), (P.), B., 674; (WIRTH), (P.), B., 832.
 manufacture of (SARLATWALLA), (P.), B., 96; (T. G. & F. E. L. STIG), (P.), B., 246*; (STIMSON), (P.), B., 367; (CORNELIUS), (P.), B., 753; (KISSOCK), (P.), B., 792.
 structural diagrams of (KASÉ), B., 92.
 case-hardening of, by nitrosation (KRUPP A.-G.), (P.), B., 132.
 etching reagents for (GROESBECK), B., 364.
 heat-resisting (RICH), (P.), B., 17.
 containing zirconium, heat-treated (ELECTRO-METALLURGICAL CO.), (P.), B., 411.
 for church bells (LANGE and STEINEL), (P.), B., 444.
 for rollers of Pilger rolling mills (PETERS), (P.), B., 17.
 non-magnetic (BECKER and FOLDHÜTTE), (P.), B., 368.
 tool (GELSENKIRCHENER GURSTAHL & EISENWERKE, KRIEGER, and RASCHKE), (P.), B., 984.
 carbon, specific heat of (UMINO), B., 920.
 influence of heat treatment and carbon content on the structure of (FINK and CAMPBELL), B., 919.
 hardness of, at high temperatures (SLATER and TURNER), B., 491, 883*.
 Al transformation in (HONDA), B., 791.
 low-carbon, flow in, at various temperatures (FRENCH and TUCKER), B., 57.
 effect of phosphorus on endurance limit of (McINTOSH), B., 827.
 for structural purposes (CROOK and PACIFIC COAST STEEL CO.), (P.), B., 753.
 quenched carbon, distribution of hardness in (KASÉ), B., 920.
 carbon and chromium, potentials of (BENEDICKS and SUNDBERG), B., 827.
 specific volume of (ANDREW, FISHER, and ROBERTSON), B., 277.
 cast, preventing adherence of, to the mould (v. BICHOWSKY), (P.), B., 368.
 chromium (SARLATWALLA), (P.), B., 884.
 annealing sheets of (HAY and UNITED ALLOY STEEL CORP.), (P.), B., 195.
 carbides from annealed (CAMPBELL and ROSS), B., 132*.
 resistant to food acids (ARMSTRONG and LUDLUM STEEL CO.), (P.), B., 495.
 magnet, heat treatment and testing of (SCHULZ and JENGE), B., 442.
 chrome-nickel, primary crystallites in (LEITNER), B., 545.
 cobalt magnet, effect of heat treatment on (SCHULZ, JENGE, and BAUERFELD), B., 492.

Iron:—

Steel, cold-drawn, magnetic permeability of (DELBART), B., 1016.
 cold-worked, brittleness of (DELBART), B., 194.
 copper-containing Thomas and Siemens-Martin, resistance to corrosion of (DAEVES), B., 545.
 hardened, transformations of, during tempering (HANEMANN and TRAEGER), B., 982.
 strengthening and recrystallisation of (HOUDREMONT, KALLEN, and THOMSEN), B., 749.
 testing of (LUNDGREN), B., 827.
 heat-resisting (NOACK), (P.), B., 96.
 heat-treated, mechanical properties of (HAWKINS, HANSON, and FORN), B., 827.
 high-speed, heat treatment of, for permanent magnets (GLOCKENSTAHLWERKE LINDENBERG), (P.), B., 61.
 hardening and tempering of (PAGE), B., 492, 883*.
 tool, cutting power of (RAPATZ), B., 828.
 high-tensile, production of (EISENWERK-GES. MAXIMILIANS-HÜTTE), (P.), B., 329.
 manganese, heat treatment of (AMER. MANGANESE STEEL Co.), (P.), B., 61.
 mild, properties of, at high temperatures (RANG), B., 1016.
 strain detection in, by wash coating (JOHNSTON), B., 194.
 influence of nitrogen on solubility of, in hydrochloric acid (GRAY), B., 919.
 mild, rolled and forged, ghost lines and banded structure of (WHITELEY), B., 491.
 nickel, relation of electrical resistance of, to composition, temperature, and heat treatment (RIBBECK), B., 949.
 effect of mass in heat treatment of (ROSENHAIN, BATSON, and TUCKER), B., 492.
 determination of nickel in, electrolytically (MOLDENHAUER), B., 588.
 nickel-chrome, properties of, after heat treatment (GUILLET), B., 194.
 non-magnetic (BRACE and WESTINGHOUSE ELECTRIC & MANUF. Co.), (P.), B., 96.
 open-hearth, comparative cold-rolling tests of electrolytic iron and (FREEMAN and FRANCE), B., 57.
 rail (FORCE), (P.), B., 196.
 rolled and forged mild, banded structure of (WHITELEY), B., 883*.
 rustless (HATFIELD), B., 57; (BAEKE), (P.), B., 329.
 electrolytic production of an adherent burnish on (PFANHAUSER and LANGBEIN-PFANHAUSER-WERKE A.-G.), (P.), B., 921.
 sheet, temperature coefficient of magnetic permeability of (SPOONER), A., 461.
 annealing of (COLE and WESTINGHOUSE ELECTRIC & MANUF. Co.), (P.), B., 244.
 silicon, treatment of sheets of (GEN. ELECTRIC Co.), (P.), B., 411.
 high-silicon structural (ANON.), B., 545.
 stainless, manufacture of (WILD and RUSTLESS IRON CORP. OF AMERICA), (P.), B., 635*; (JOHNSON), (P.), B., 753.
 titanium (W. and H. MATHESUS), (P.), B., 754.
 mechanical properties of (TAMARU), B., 545.
 tool (HONES), (P.), B., 96.
 chemical composition of (GILL and FROST), B., 828.
 tempering and ageing of (SCOTT), B., 881.
 tungsten, determination of phosphorus in (ROONEY and CLARK), B., 493.
 low-tungsten tool, nature of (GROSSMAN and BAIN), B., 881.
Steel bars, cold-drawn, effect of reheating on (SPALDING), B., 920.
 castings, core for (EOKERT, OPPELT & Co), (P.), B., 196.
 furnace, basic open-hearth, reactions of (COLCLOUGH), B., 367*.
 ingots, heterogeneity of (ANON.), B., 490, 883.
 distribution of silicates in (DICKENSON), B., 883.
 distribution of slag in (DICKENSON), B., 491.
 rails, heat treatment of (THIBAUDIER and VITEAUX), B., 365.
 strip, open-hearth, recrystallisation temperatures of (FREEMAN), B., 919.
Iron detection, determination, and separation:—
 detection of (LONGINESCU and PETRESCU), A., 263.
 and its oxides, analysis of mixtures containing (INGEBERG), B., 130.
 determination of small quantities of (SMITH and COOKE), A., 1222.

Iron detection, determination, and separation:—

determination of, colorimetrically (BERNOULLI), A., 1116.
 determination of, colorimetrically, in red lead, in presence of bismuth (HEINRICH and HERTRICH), B., 372.
 determination of, electrometrically (COLLEBERG and SANDVED), A., 140.
 determination of, volumetrically (MANCHOT and OBERHAUSER), A., 40.
 determination of, by means of arylphosphoric acids (ZETZSCHE and NACHMANN), A., 705, 1242.
 determination of, by the dichromate method (BESOMBE), A., 377.
 determination of, with thiosulphates (JELLINEK and CZERWINSKI), A., 282.
 determination of, in biological material (ELVEHJEM and HART), A., 443.
 determination of, in presence of copper (BRANDT), B., 752.
 determination of copper and, in metallurgical products, by potentiometric titrations (BUEHRER and SCHUPP), B., 282.
 determination of, in ferrum reduction (HORLÜCK), B., 897.
 determination of, in red lead (SACHER), B., 631.
 determination of, in physiological fluids (MISLOWITZER and SCHAEFER), A., 443.
 determination of, colorimetrically, in tea (MUMMERY), B., 993.
 determination of, in tissues and physiological fluids (FOW-WEATHER), A., 443.
 determination of, in uranium ores, volumetrically (RUSSELL), B., 328.
 and its alloys, determination of carbon in (SCHIFFEN), B., 492.
 determination of gases in (KLINGER), B., 983.
 determination of oxygen in (OBERHOFFER, KEUTMANN, HESSENBRUCH, and AMMON), B., 790.
 determination of sulphur in (KLING and LASSIEUR), B., 588; (JÄRVINEN), B., 983.
 ferric, determination of, colorimetrically (VAN URK), A., 1116.
 determination of, with titanous salts (SOMEYA), A., 1116.
 ferric and ferrous, determination of, volumetrically, with iodides (TANANAEV), A., 263.
 ferrous, determination of (BONNER and YOST), A., 261.
 separation of aluminium and, from zirconium (LESSING), A., 263.
 separation of iridium from (SCHOELLER), A., 931.
 α-iron, diffusion of carbon in (ZINGG), B., 669.
 plastically strained, structure of (ONO), A., 112.
Iron castings (FLETCHER and YOUNG), (P.), B., 675*.
 treatment of (FLETCHER and YOUNG), (P.), B., 195.
 heat treatment of (DIEDERICH), (P.), B., 368.
 having silicon-alloy surface (JACOBS and DU PONT DE NEMOURS & Co.), (P.), B., 673.
 grey, production of (MELOCHE and HOLLEY), (P.), B., 884.
 iron coke, production of (WETHERBEE), (P.), B., 635.
 iron cupola charges, use of briquettes of cast iron and rusted and unrusted steel in (LECHNER), B., 15.
 iron fire-bars, behaviour of (STUMPER), B., 255.
 iron ingots, treatment of (TAFEL), (P.), B., 832.
 iron ores, roasting of (APOLD and FLEISSNER; FLEISSNER), (P.), B., 62.
 treatment of (VAN SLYKE), (P.), B., 162.
 improvement of (McCORMACK), (P.), B., 412.
 briquetting of (OESTLUND), (P.), B., 883.
 finely divided, and residues, agglomeration and briquetting of (OTTOLENGHI), B., 790.
 reduction of (GEWERKSCHAFT ALFLEN VII), (P.), B., 329; (FARUP and NORSK HYDRO-ELEKTRISK KVAELSTOFARTIESELSKAB), (P.), B., 368.
 apparatus for (DUFFIELD), (P.), B., 411.
 by hydrogen (KAMURA), B., 131*.
 by methane or gases containing it (GEISENKIRCHENER BERGWERKS A.-G.), (P.), B., 244.
 catalytic action of, in decomposition of carbon monoxide (FARUP), B., 490.
 extraction of nickel and cobalt from (KICHLIN and BETHLEHEM STEEL Co.), (P.), B., 755.
 Fricktal and Gonzen, smelting experiments with (DURRER), B., 410.
 low-grade, utilisation of (HINDSHAW and HINDSHAW ENGINEERING & DEVELOPMENT Co.), (P.), B., 710.
 poor oolitic, reduction of (BING), (P.), B., 329.
 oxide, reduction of, with gases (SCHENCK and THORSELL), (P.), B., 329.

- Iron ores, spathic, elimination of sulphur from, by roasting (RUHRMANN), B., 825.
 sulphide, hydrometallurgical treatment of (TRAILL and McCLELLAND), B., 670.
 desulphurisation and concentration of (MILLAR), (P.), B., 134*, 329.
 containing other metals, treatment of (ESTELLE), (P.), B., 132.
 containing vanadium and titanium, recovery of vanadium from (KJELLBERG), (P.), B., 321.
 Iron pipes, corrosion of (BAYLIS), B., 493.
 Iron plates, apparatus for galvanising of (PASSEKER), (P.), B., 445*.
 Iron pyrites. See Pyrites.
 Iron sponge, furnace for production of (HÖGANÄS-BILLESJÖLMS AKTIEBOLAG), (P.), B., 368.
 kiln for production of (SIEURIN), (P.), B., 673.
 Iron wire, effect of a magnetic field on magnetic permeability of (MITIAEV), A., 1086.
 Iron-porphyrates, reaction of, with sodium cyanide, hydrazine hydrate, and potassium hydroxide (SCHUMM), A., 968.
 Isatic acid. See Isatoic acid.
 Isatin, absorption spectra of, and its ethers (MORTON and ROGERS), A., 9.
 sodium derivative, action of, on ethyl chloroformate (HELLER and LAUTH), A., 957.
 Isatin, 5-amino-, acetyl derivative (BORSCHIE and FRITZSCHE), A., 393.
 4:5:6:7-tetraiodo- (CHEM. FABR. SCHERING), (P.), B., 514.
 4- and 5-nitro-, constitution of (RUPE and KERSTEN), A., 843.
 Isatin series, isomerism in (HELLER and LAUTH), A., 740; (HANTZSCH), A., 1255.
 Isatins, iodo-, preparation of (CHEM. FABR. SCHERING), (P.), B., 514, 721*.
 Isatinmonoximethiocarbohydrazone (GUHA and DEY), A., 417.
 Isatin-*o*-phenylenedihydrazone (GUHA and DE), A., 743.
 Isatoic acid, 4- and 5-nitro- (RUPE and KERSTEN), A., 843.
 Isinglass, production of aqueous solutions of (CARPENTER), (P.), B., 989.
 Isomerides, optical (CUSHNY), A., 1273.
 Isomerism, electronic nature of (BEREZOVSKA), A., 887.
 in aromatic compounds (CHAPMAN), A., 161.
 of complex compounds (HANTZSCH), A., 949.
cis-trans-, and steric hindrance (VAVON, ANZIANI, and HERYNK), A., 1033; (VAVON and PEIGNIER), A., 1042.
 biological significance of (COOPER and EDGAR), A., 1172.
 of complex co-ordination compounds (REHLEN), A., 457.
 of cyclic compounds (VAVON), A., 837.
 dynamic (LOWRY and FAULKNER), A., 148; (JONES and LOWRY), A., 481; (FAULKNER and LOWRY), A., 1026.
 Isoprene and caoutchouc (STAUDINGER and WIDMER), A., 840; (STAUDINGER and GEIGER), A., 841.
 Isotherms, calculation of (LORENZ and MANNHEIMER), A., 680.
 of diatomic substances, and their mixtures (NIJHOFF and KEESOM), A., 463.
 Isotopes, line spectra of (JENKINS), A., 771.
 arrangement of, in series (HORI), A., 879.
 Isotropic media, optically active, theory of (BURSIA and TIMOREV), A., 994.
 Itaconic acid, esters, cement for glass from (HOPE), (P.), B., 747.
 ethyl ester, action of ethyl malonate and sodium ethoxide on (INGOLD and SHOPPEE), A., 1039.

J.

- Jalap, mannitol in (ROSENTHALER), A., 210.
 Jam, acids in fruits used for (MUTTELET), B., 564.
 detection of apple pulp in (PARTRIDGE), B., 719.
 Jamba oil (SUDBOROUGH, WATSON, AYYAR, and MIRCHANDANI), B., 954.
 Japan films, baked, evaluation of (HONAN and WATERMAN), B., 955.
 Jasmine oil, farnesol in (ELZE), B., 1023.
 German (TREFF, RITTER, and WITTRISCH), B., 850.
 Jaundice, synthesis and elimination of components of bile in (BRAKEFIELD and SCHMIDT), A., 538.
 Jellies, formation of (MEHLITZ), B., 105.
 Jelly base, production of (GUSMER), (P.), B., 564.
 Jelutong (EATON, GEORGI, and TEIK), B., 1021.
 product from (BEECH-NUT PACKING Co. and BEATTY), (P.), B., 555.
 Jewellery, palladium alloys in, and their detection (DURDIK), B., 791.

- Johannesia Princeps*, seed and oil of (ETZEL and KING), B., 592.
 Johannite, identity of gilpinite with (LARSEN and BERMAN), A., 710.
 Joints, high-pressure (SYNTHETIC AMMONIA & NITRATES and BRAMWELL), (P.), B., 472.
Juglans regia (walnut), constituents of bark of (ZELLNER), A., 646.
Julocroton montevidensis, alkaloid from (ANASTASI), A., 744.
 Jute, mechanical treatment of (SHARP), (P.), B., 1010.
 bleaching of. See under Bleaching.
 Juxporite (KOSTYLEVA), A., 1022.

K.

- Kaempferia galanga*, essential oil from the rhizomes of (PANIOKER, RAO, and SIMONSEN), B., 1028.
 Kaempferide, synthesis of (HEAP and ROBINSON), A., 1149.
 Kala-azar, chemotherapy of antimonials in infection by (BRAHMACHARI and DAS), A., 541; (BRAHMACHARI), A., 864.
 Kaolin, adsorption by (TESTONI), A., 789.
 colloid chemistry of (NISHIKAWA), A., 575.
 compression of (BIGOT), A., 379.
 mixtures of sillimanite and (HOULDSWORTH), B., 239.
 control of tetany by (DRAGSTEDT and SUDAN), A., 971.
 action of, on aqueous solutions (RAUZIN and NESMEJANOV), A., 119.
 Georgia and North Carolina, use of, in semi-porcelain bodies (HEMSTEGGER and STIER), B., 917.
 Kapok, differentiation of cotton and (LEJEUNE), B., 355.
 Katanol W in dyeing of union fabrics (RUDOLPH), B., 484.
 Kauri dust, analysis of (WOLFF), B., 837.
 Kavatel oil (ANDRÉ), B., 98.
 Keratin, action of alkalis on (BERGMANN and STATHER), B., 640.
 analysis, constitution, and properties of (BARRITT), B., 530.
 Kermes, comparison of cochineal with colouring matter from (JUSTIN-MUELLER), A., 840.
 Kerosene, deodorisation of (KRITCHEVSKY, PRUTZMAN, and CITRON), (P.), B., 6.
 corrosion of copper by (STAUDT), B., 3.
 distillate from Californian petroleum, naphthenic acids from (TANAKA and NAGAI), B., 476.
 Kerr effect in liquefied gases (WALCH), A., 887.
 Ketazines, reduction of, by aluminium amalgam (MACUREVITSCH), A., 824.
 Ketene, Friedel-Crafts reaction with (HURD), A., 70; (PLOGE), A., 614.
 Ketens, dimeric, isomerism of *cyclobutadiones* and (SCHROETER and FINCK), A., 731.
 α -Ketoadipic acid, ethyl ester, phenylhydrazono of (KALB, SCHWEIZER, and SCHIMPF), A., 1151.
 derivatives of (KALB, SCHWEIZER, ZELLNER, and BERTHOLD), A., 1152.
 α -Keto-alcohols, molecular transformations of (FAVORSKI, VÉNUSDANILOVA, VASSILIEV, UMNOVA, and KOTCHERGINE), A., 500.
 α -Ketozelaic acid (GOSS and INGOLD), A., 821.
 β -Keto-bases, unsaturated, preparation of (MANNICH), (P.), B., 901.
 κ -Ketobehenic acid, and its amide (G. M. and R. ROBINSON), A., 1024.
 3-Keto-1:4-benzdithian-2:2'-*spiro*-1:3'-benzdithiole (HURTLEY and SMILES), A., 1150.
 1- and 2- γ -Ketobutenyl naphthalenes, and their oximes (GIBSON, HARIHARAN, MENON, and SIMONSEN), A., 1154.
 Ketobutyl alcohol, resin from (ELLIS), (P.), B., 68.
 1- and 2- γ -Ketobutenyl naphthalenes, and their oximes and semicarbazones (GIBSON, HARIHARAN, MENON, and SIMONSEN), A., 1154.
 3-Ketodeoxypyrrroltobillianic acid, and its methyl ester (WINDAUS), A., 724.
 3-Keto-3:4-dihydro-1:4-benzoxazine-6-carboxylic acid (CHRISTIANSEN), A., 518.
 2-Keto-1:2-dihydrobenzisothiazole, and its derivatives (McCLELLAND and GAIT), A., 743.
 Ketodihydrocyclopentadiene, and its derivatives (WIELAND, BERGEL, SCHWARZ, SCHEPP, and FUKELMAN), A., 56.
 2-Ketodihydroindole-3- β -propionic acid, and its halogen derivatives, oxidation-reduction potentials of (KENDALL and ORT), A., 912.
 and 4:6-di- and 4:6:7-tri-bromo-, and 6-mono- and 4:6-di-iodo- (KENDALL, OSTERBERG, and MACKENZIE), A., 734.

- 2-Keto-2:3-dihydrotricyclopentole-3- β -propionic acid, and 4:6-di-bromo-, and 6-mono-, and 4:6-di-iodo- (KENDALL, OSTERBERG, and MACKENZIE), A., 735.
- 2-Keto-2:3-dihydropyriminazole, bromo-derivatives of (REINDEL and ROSENDAHL), A., 743.
- 2-Keto-2:3-dihydrothiazine-6-thiolacetic acid, 3:3-di-bromo- (FINZI and PAGLIARI), A., 309.
- 2-Keto-2:3-dihydrothionylazine-6-sulphoxyacetic acid, and 7-nitro- (FINZI and PAGLIARI), A., 309.
- β -Keto- α -dimethylbutane- α - γ -tricarboxylic acid, ethyl ester (ROBERTS), A., 1125.
- δ -Keto- γ -dimethylnonoic acid, and its derivatives (RUZICKA and PFEIFFER), A., 1148.
- Ketodinaaphthylene oxido, hydroxy- (PUMMERER and RIECHE), A., 1135.
- 3-Keto-2:6-diphenyl-2:3-dihydropyrimidine (PONZIO and PEROLIO), A., 308.
- 3-Keto-2:6-diphenyl-2:3:4:5-tetrahydropyrimidine, and its acetyl derivatives (PONZIO and PEROLIO), A., 308.
- 2-Keto-1-ethylcoumaran, 3:5-dihydroxy- (KLARMANN), A., 1135.
- α -Ketoformhydroxamic acids, and their derivatives (GASTALDI and STRATTA), A., 277.
- oximes of (BAIARDO), A., 1262.
- α -Ketogluconic acid, constitution of (HÖNIG), A., 147.
- l*-Ketogluconic acid, preparation of, and its calcium salt (KILIANI), A., 940.
- α -Ketoglutaric acid, fermentation of, by *Bacterium xylinum* (IWATSURU), A., 435.
- phenylhydrazones phenylhydrazide of (HÖNIG), A., 147.
- 1-Keto-2:3-cyclohexadiene, 4-chloro-2:4:6-tribromo- (KOHN and ROSENFELD), A., 232.
- 1-Keto-2:3-cyclohexadienes, dichlorodibromo- (KOHN and SUSSMANN), A., 832.
- 2-Ketohexahydrobenzofuran-3- β -propionic acid, and its ethyl ester (KENDALL, OSTERBERG, and MACKENZIE), A., 734.
- α -Ketohexahydrobenzophenanthene, and its derivatives (v. BRAUN and REUTER), A., 1139.
- 2-Keto-2:3:4:5:6:7-hexahydroindole-3- β -propionic acid (KENDALL, OSTERBERG, and MACKENZIE), A., 734.
- 2-Ketocyclohexane- α -glutaric acid, and its derivatives (KENDALL, OSTERBERG, and MACKENZIE), A., 734.
- β -Ketohexan- δ -ol, γ -chloro- (PASTUREAU and BADER), A., 382.
- 1-Ketohydrindyl-2-glyoxylic acid, and its ethyl ester, and their derivatives (LEUCHS and KOWALSKI), A., 66.
- allo* Ketolithobillanic acid, trimethyl ester (WINDAUS), A., 724.
- 13-Ketolithobillanic acid, trimethyl ester (WINDAUS), A., 724.
- 3-Keto-2-methyl-6:7-benzocoumaran, 5-bromo- (FRIES and SCHIMMELSHMIDT), A., 294.
- 3-Keto-4-methyl-3:4-dihydro-1:4-benzoxazine-6-carboxylic acid, methyl ester (CHRISTIANSEN), A., 518.
- β -Keto- δ -methylheptan- δ -ol, γ -chloro- (PASTUREAU and BADER), A., 382.
- 2-Keto-1-methylquinoline, 3-hydroxy- (HELLER, FUCHS, JACOBSON, RASCHIG, and SCHÜTZE), A., 620.
- 4-Ketomethyl-1:2:3:4-tetrahydroquinolines, and their derivatives (CLEMO and PERKIN), A., 76.
- δ -Ketomyristic acid, and its oxime (G. M. and R. ROBINSON), A., 1024.
- Ketone, $C_{11}H_{20}O$, and its semicarbazone, from tetrahydroelemene (RUZICKA and PFEIFFER), A., 1148.
- $C_{12}H_{22}O$, and its semicarbazone, from tetrahydroelemene (RUZICKA and PFEIFFER), A., 1148.
- $C_{14}H_{22}O$, from elemol (RUZICKA and PFEIFFER), A., 1148.
- $C_{15}H_{26}O_2$, from oxidation of β -caryophyllene (GIBSON, ROBERTSON, and SWORD), A., 299.
- $C_{15}H_{24}O$, and its semicarbazone, from oxidation of β -caryophyllene (GIBSON, ROBERTSON, and SWORD), A., 299.
- $C_{28}H_{38}O_4$, from oxidation of digitonin (WINDAUS), A., 409.
- $C_{28}H_{40}O_3$, from oxidation of digitonin (WINDAUS), A., 409.
- $C_{31}H_{48}O_3$, and its derivatives, from oxidation of hederagenin methyl ester (JACOBS and GUSTUS), A., 1250.
- Ketones, formation of, from tertiary alcohols (GRIGNARD and CHAMBRET), A., 263.
- interchange of groupings between alcohols and (PONNDORF), A., 520.
- rotation of mixtures of optically active organic acids with (PASERINI), A., 226.
- superheating of (SKRAUP and GUGGENHEIMER), A., 170.
- catalytic hydrogenation of, in presence of platinum-black (FAULEBIN), A., 50.
- Ketones, condensation of 2-aminopyridine with (SCHMID and BANGLER), A., 848.
- reduction of oximes and phenylhydrazones of (MACUREVITSCH), A., 824.
- hydrogen sulphite compounds of (RASCHIG), A., 598; (RASCHIG and PRAHL), A., 939; (FUCHS), A., 952.
- reactions of tellurium tetrachloride with (MORGAN and ELVINS), A., 188.
- aliphatic, hydrolysis of acetals of (ARBUSOV), A., 805.
- condensation of furfuraldehyde with (KASIWAGI), A., 842.
- condensation of mesityl oxide with (EKELEY and CARPENTER), A., 1143.
- aliphatic-aromatic, condensation products of, with polyalcohols (ALTWEGG, CHERMETTE, and Soc. CHIM. USINES DU RHÔNE), (P.), B., 462.
- aromatic, reduction of (KUBOTA and HAYASHI), A., 1041.
- cyclic (RUZICKA, STOLL, and SCHINZ), A., 615.
- opening of rings of (EDWARDS), A., 835.
- action of benzaldehyde on (CORNUBERT and BORREL), A., 953.
- disubstituted, formation of, from trisubstituted aldehydes (ORÉKHOF and TIFFENEAU), A., 171.
- monocyclic, with more than nine ring members (NAEF & Co.), (P.), B., 608.
- optically active, preparation of (McKENZIE, ROGER, and WILLS), A., 610.
- phenolic, syntheses of, by Hoesch's method (BORSCHÉ and WALTER), A., 515.
- of pyridine series, manufacture of (CHEM. FABR. SCHERING), (P.), B., 216.
- unsaturated, alkylation of (KON), A., 952.
- analysis of (NOLL), B., 994.
- Ketones, thio-, action of triethylphosphine and its peroxide on (SCHÖNBERG and KRÜLL), A., 953.
- Ketone-alcohols (TIFFENEAU and LEVY), A., 71.
- Ketone ether, hydrated (BOUGAULT), A., 167, 404, 518, 613, 725.
- α -Ketonic acids, unsaturated, additive reactions of (REIMER), A., 1139.
- Ketonic esters, action of thiosemicarbazide and semicarbazide on (DE), A., 738.
- α -Ketonoadeic acid, and its amide (G. M. and R. ROBINSON), A., 1024.
- γ -Ketonaldehyde, and its disemicarbazone (RUZICKA and BRUGGER), A., 727.
- γ -Ketonoic acid (RUZICKA and BRUGGER), A., 727.
- 2-Keto-octahydrobenzofuran-3-carboxylic acid, ethyl ester (KENDALL, OSTERBERG, and MACKENZIE), A., 734.
- 2-Keto-octahydrofuran-3- β -propionic acid (KENDALL, OSTERBERG, and MACKENZIE), A., 734.
- β -Ketopentan- δ -ol, γ -chloro- (PASTUREAU and BADER), A., 382.
- Ketopolyhydronaphthalene derivatives (RIEDEL), (P.), B., 610.
- 4-Keto-3-phenyl-1:2-benzoxazine, 7-nitro- (BISHOP and BRADY), A., 617.
- 3-Keto-6-phenyl-2-*p*-bromophenyl-2:3:4:5-tetrahydropyrimidine, and its diacetyl derivative (PONZIO and PEROLIO), A., 308.
- γ -Keto- β -phenylbutaldimine (RUPE, METZGER, and VOGLER), A., 55.
- γ -Keto- α -phenyl- γ -chlorophenylbutyric acid, β -hydroxy-, and its methyl ester (KÖHLER and SHOHAN), A., 1140.
- 6-Keto-5-phenyl-3-*p*-chlorophenyl-1:2-oxazine, and its sodium salt (KÖHLER and SHOHAN), A., 1140.
- 3-Keto-2-phenyl- ψ -indole-1-oxide, 6-nitro- (BISHOP and BRADY), A., 617.
- 2-Keto-4-phenyltetrahydro-1:3:4-oxadiazine (DOX), A., 963.
- 3-Keto-2-phenyl-6-*p*-tolyl-2:3-dihydropyrimidine (PONZIO and PEROLIO), A., 308.
- 3-Keto-2-phenyl-6-*p*-tolyl-2:3:4:5-tetrahydropyrimidine, and its diacetyl derivative (PONZIO and PEROLIO), A., 308.
- 13-Ketostadenic acid, and its derivatives (WINDAUS), A., 724.
- Ketostearic acids, synthesis of (G. M. and R. ROBINSON), A., 1024.
- γ -Ketotetradecane- α -dicarboxylic acid (RUZICKA), A., 615.
- 3-Ketotetrahydroacenaphthene, and its derivatives (v. BRAUN and REUTER), A., 1139.
- Ketotetrahydrocyclopentadiene (WIELAND, BERGEL, SCHWARZ, SCHEPP, and FUKELMAN), A., 56.
- 4-Keto-1:2:3:4-tetrahydroquinoline, 6-hydroxy- (CLEMO and PERKIN), A., 76.
- 4-Keto-1:2:3:4-tetrahydro-*n*- and -*iso*-quinolines, synthesis of (CLEMO and PERKIN), A., 76.

- 3-Keto-2:2:4:5-tetraphenyl-2:3-dihydrofuran (KOHLEH), A., 309.
 5-Keto-3:4:6:6-tetraphenyl-2-ethyl-2:5-dihydro-1:2(6)-oxazine, and its derivatives (KOHLEH), A., 530.
 4-Keto-3- γ -xylol-2-thiothiazolidone, and its derivatives (HANN), A., 309.
Khakan fat (PATEL, NARAYANA, IYER, SUDBOROUGH, and WATSON), B., 1019.
Kidneys, function of (REHBERG), A., 858.
 excretion by, in pregnancy (YAMADA), A., 859.
 effect of X-rays on excretion of chlorine by (ENGELHARD and SIELMANN), A., 1053.
 hydrolysis of phosphoric esters by (EICHHOLTZ, ROBISON, and BRULL), A., 88.
 phosphatase of (KAY), A., 977.
 secretion of inorganic phosphates by (BRULL and EICHHOLTZ), A., 88.
 excretion of uric acid by (GREMELS and BODO), A., 1053.
Kiers, control of solutions in (TAYLOR), (P.), B., 663.
Kieselguhr, recovery of, from waste material from sugar refining (WILLIAMS), (P.), B., 55.
 filter-aid and decolorising agent from (CALVERT and CELITE Co.), (P.), B., 487.
 calcined, effect of heat on strength of mixtures of Portland cement and (McDOWELL and KRANER), B., 128.
 of the Lüneburger Heide, protein gel found in (v. HAHN), A., 23.
Kieserite, conversion of, into solid Epsom salts (KALI-IND. and RATIG), (P.), B., 788.
Kilns (LENGERSDORFF), (P.), B., 192*; (GRUETZEMACHER and GLENCOE LIME & CEMENT Co.), (P.), B., 519; (BALZ), (P.), B., 857.
 heating of (AGNEW and OEFFNER), (P.), B., 113.
 for burning cement (NASKE; VICKERS and PARKER), (P.), B., 409.
 annular, for drying and carbonising carbonaceous materials (DOBDELSTEIN and HESS), (P.), B., 4, 6*.
 brick (STONEWARE, LTD. and DEAN), (P.), B., 362; (PROCTER), (P.), B., 747.
 ceramic, flow of heat in walls of (WILLMER), B., 540.
 continuous (STRAIGHT), (P.), B., 363; (SMITH), (P.), B., 543; (FREEBOROUGH), (P.), B., 904.
 compartment (BLEININGER and HOMER LAUGHLIN CHINA Co.), (P.), B., 879.
 down-draught, for manufacture of bricks and pipes (EVANS), (P.), B., 918.
 drying. See Dryers.
 electrically heated (SIEMENS & HALSKE, GROSS, and STADLHUBER), (P.), B., 331.
 laboratory, for high temperatures (NORTON), B., 143.
 muffle, for ceramics (CROSBIE and COLLARD), (P.), B., 918.
 laboratory muffle, for testing ceramic products (MERRITT), B., 632.
 open-fire (MEEHAN and AMER. DRESSLER TUNNEL KILNS), (P.), B., 935.
 pottery (EYERS), (P.), B., 918.
 oil- or gas-fired (MURRAY), (P.), B., 948.
 round, smoke consumption in (INGENIEURGES FÜR WÄRMEWIRTSCHAFT A.-G.), (P.), B., 632.
 roasting (BALZ), (P.), B., 196.
 rotatory, for bituminous materials (ROSER), (P.), B., 972.
 cement-burning, supply of raw slurry to (NIELSEN), (P.), B., 981.
 tunnel (WILPUTTE), (P.), B., 192*; (HANLEY), (P.), B., 441; (WEBER, SCHLEIFFARTH, and RUSSELL ENGINEERING Co.), (P.), B., 543; (MEEHAN, ROBERTSON, and AMER. DRESSLER TUNNEL KILNS Co.); BOOTH; BURLEY, (P.), B., 586; (DUCKHAM), (P.), B., 668*; (WILSON and LYKKEN), (P.), B., 904; (MORGAN CRUCIBLE Co. and SPEIRS), (P.), B., 948.
 for baking pottery (D'ARLEUX and VIOLETTE), (P.), B., 918.
Kinematograph colour positives (THORNTON), (P.), B., 516.
 films, printing of (ROLAND and BURSTEIN), (P.), B., 109.
 sensitisation of (WEINGARTEN), (P.), B., 174.
 preservative for (CRABTREE and EASTMAN KODAK Co.), (P.), B., 220.
 compensating the copying intensity of (LEHMANN), (P.), B., 388.
 multicolour (THORNTON), (P.), B., 515, 516.
 waste, treatment of (MACDONALD), (P.), B., 517*.
 pictures in natural colours (LIERG and POKORNY), (P.), B., 997.
Kinematography, natural-colour (CAMPBELL), (P.), B., 77.
Kinetic theory of gases (PERSICO), A., 564.
 "Knall-gas," explosion of, diluted with argon and helium (BONE, NEWITT, and TOWNEND), A., 480.
Kola, preparation of, from kola nuts (WULFF), (P.), B., 644.
Kola nut, soluble food product from (A. & E. CHALAS), (P.), B., 213.
Kombe-strophanthins (JACOBS and HOFFMANN), A., 982.
Kraboo oil (ANDRÉ), B., 98.
Krypton, spectrum of (GEHRCKE and JANICKI), A., 1071.
 spark spectrum of (OTSUKA), A., 651.
 magnetic susceptibility of (CROW), A., 14.
 cathode fall in (GÜNTHER-SCHULZE), A., 3.
 content of, in air (RABINOVITSCH), A., 808; (MOUREU and LEPAPE), A., 933.
 "Kuromoji" seed oil, acids in (TSUJIMOTO), B., 637.
 "Kurrajong," fixed oil of the seeds of (MORRISON), B., 794.
- L.
- Laccase**, action of hydrocyanic acid on (FLEURY), A., 202.
Lacquers (FARBENFABR. VORM. BAYER), (P.), B., 796.
 preparation of, from tung oil (SCHMIDDINO), (P.), B., 988.
 manufacture of, from soft lignite (EHEBERG, WIEDERHOLD, KRUG, HOLDSBOER, FISCHER, and STUDIENGES. F. AUSBAU DER IND.), (P.), B., 414.
 "two-type" solvents for (KEYES), B., 67.
 priming compositions for (ROTH and WEITHÖNER), (P.), B., 67.
 use of glycol ethers in (DAVIDSON), B., 714.
 from cellulose derivatives, increasing the durability of (LE PLAY), (P.), B., 401.
 cellulose nitrate (LAIN), B., 373.
 oven-drying, production of (CELLA DRAHTWERK), (P.), B., 838.
Lactalbumin, crystallisation of (CHAPMAN), A., 189.
Lactic acid, formation and determination of (EDER and KUTTER), B., 690.
 formation of, from methylglyoxal by ketone-aldehyde mutase (GORR and PERLMANN), A., 1059.
 by bacteria (NEUBERG and GORR), A., 325, 868; (VIRTANEN, KARSTRÖM, and BÄCK), A., 435; (PEDERSON, PETERSON, and FRED), A., 759; (v. EULER and NILSSON; VIRTANEN and KARSTRÖM), A., 868; (MEZZADROLI), B., 210.
 in flowering plants (NEUBERG and GORR), A., 761, 872.
 in depancreatized dogs (WEBER, BRIGGS, and DOISY), A., 426.
 in the liver (BRUGSCH, HORSTERS, and NARITA), A., 198.
 in muscular exercise (FURUSAWA; LONG), A., 190.
 influence of caffeine on, in muscle (EVANS), A., 1171.
 in smooth muscle in *rigor mortis* (MANGOLD and SCHMITT-KRAHMER), A., 427.
 formation and disappearance of, in animal tissues (MEYERHOF and LOHMANN), A., 753.
 manufacture of (FAITHFULL), (P.), B., 252.
 production of, for use in yeast manufacture (POLLAK), (P.), B., 73.
 purification of (LAWRIE and DU PONT DE NEMOURS & Co.), (P.), B., 898.
 equilibrium of aniline, water, and (ANGELESCU), A., 357.
 condensation of, to methylsuccinic acid (IPATIEV and RAZUBAIEV), A., 1124.
 action of yeast on (HOFFERT), A., 642.
 in blood in respiration (BINET and COLLAZO), A., 421.
 accumulation of, in the isolated brain, and its function in respiration (MCGINTY and GESELL), A., 967.
 in *rigor mortis* of plain muscle (MANGOLD and SCHMITT-KRAHMER), A., 539.
 content of, in plain muscle (EVANS), A., 194.
 in mammalian cardiac muscle (KATZ and LONG; HINES, KATZ, and LONG), A., 89; (KATZ, KERRIDGE, and LONG), A., 90.
 in muscle during tetanus (EMBDEN, HIRSCH-KAUFFMANN, LEHNARTZ, and DEUTICKE), A., 427.
 in tumour tissues (BIERICH), A., 860.
 excretion of, in avitaminosis (ROSENWALD), A., 436.
 commercial, lactic acid and anhydride in (EDER and KUTTER), A., 499.
 analysis of (THUAN and VIDAL), B., 963.
 optically active, conversion of, into α -dihydroxypropane (LEVENE and HALLER), A., 597.

- Lactic acid, detection of (CAPELLI), A., 632.
 detection and determination of, in presence of other organic acids (NELSON), B., 895.
 and its salts, determination of, microchemically (HANSEN), A., 444.
 determination of, in blood (MENDEL and GOLDSCHIEDER), A., 212; (FREJKA and VŠETČKA), A., 327; (VAS and LANG), A., 1087; (BREHNE and BRAHDY), A., 1282.
 determination of, in wine (BONIFAZI), B., 603.
- Lactic acid, salts, manufacture and use of, in brewing, etc. (MURPHY), (P.), B., 251.
 crystallisation of (KRAUSKOPF and CARTER), A., 820.
 calcium and strontium salts, control of parathyroid tetany by (DRAGSTEDT and SUDAN), A., 971.
 calcium sodium salt (UMBER and v. WÜLFING), (P.), B., 108.
 rare earth salts of (JANTSCH), A., 820.
- Lactic acid, esters, manufacture of (CHEM. FABR. VORM. SCHERING), (P.), B., 1028.
 butyl esters, rotation dispersion of (WOOD, SUCH, and SCARF), A., 994.
 chloroethyl ester (ABDERHALDEN, PAFFRATH, and SICKEL), A., 97.
- Lactic acid, nitro-, *n*-butyl ester, preparation of (BURKE, KRAMER, and DU PONT DE NEMOURS & Co.), (P.), B., 995.
- d*(-)-Lactic acid, *d*-phenylethylammonium salt (HOLMBERG), A., 939.
- d*- and *l*-Lactic acids, utilisation of, in the organism (MEYERHOF and LOHMANN), A., 754.
- Lactic ferment, pharmaceutical preparations of (PLACERES), B., 849.
- Lactones, reactions of, with aromatic hydrocarbons and aluminium chloride (KING), A., 288.
- Lactose (*milk-sugar*), structure of (ZEMPLÉN), A., 1229.
 recovery of, from whey (ELEKTRO-OSMOSE A.-G.), (P.), B., 419; (DUNHAM and ROSEMARY CREAMERY Co.), (P.), B., 461.
 products of oxidation of, with Fehling's solution (HERZFELD), B., 560.
 determination of, in presence of sucrose (FINCKE), B., 252; (JESSEN-HANSEN), B., 294.
- α - and β -Lactucic acid acetates (STERN and ZELLNER), A., 647.
- Lävulic acids, substituted, *spiro*-compounds from (ROTHSTEIN and THORPE), A., 1038.
- Lävulose (*d*-fructose; *fruit-sugar*), crystalline, occurrence of (v. LIPPMANN), A., 386.
 structure of (HAWORTH and HIRST), A., 941.
 preparation of (JACKSON, SILSBEE, and PROFFITT), B., 560.
 effect of *dl*-alanine on rotation of (NEUBERG and KOBEL), A., 151.
 oxidation of (EVANS, BUEHLER, LOOKER, CRAWFORD, and HOLL), A., 148.
 action of disodium phosphate on (SPOEHR and WILBUR), A., 1126.
 assimilation of, in fasting and on protein-fat diet (NAOASAYE), A., 1055.
 osazone of (VOTOČEK, ETELL, and KOPPOVA), A., 501.
 determination of (CAMPBELL and HANNA), A., 1284.
- Lakes, synthetic organic dyes used in manufacture of (ROWE), B., 449.
 colour, manufacture of (GIMBERG and BAILLY), (P.), B., 167; (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 355*.
 greenish-blue (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 149.
- Lamb, vitamin-A in (HOAGLAND and SNIDER), A., 206.
- Laminaria, chemical constituents of (ATSUKI and TOMODA), A., 1230.
- Laminaria flexicaulis, detection of rubidium in (FREUNDLER and MÜNAGER), A., 702.
- Lamps, electric. See Electric lamps.
- mercury vapour (FORCE and GEN. ELECTRIC Co.), (P.), B., 65; (NISBET), (P.), B., 446.
 laboratory (HULBERT), A., 705; (CLARK), B., 445.
- Osram Pointolite (HOCHHEIM and KNEBEL), B., 437.
- quartz, use of, in the paint and varnish industry (EIBNER, WIDENMAYER, and STÖIS), B., 759; (SCHMIDINGER), B., 760.
- mercury (CUNLIFFE, FRANKLIN, MADDISON, and REEVE), A., 1112.
 increase of ultra-violet radiation from (GEORGE), (P.), B., 446.
 luminescence analysis with (ROBL), A., 701.
- Lamp wicks (MILES and NOBEL'S EXPLOSIVES Co.), (P.), B., 436.
- Lampblack, manufacture of (VEREIN FÜR CHEM. & METALL. PRODUKTION), (P.), B., 837.
 production of, from waste asphalt (DIVINE), (P.), B., 232.
- Lamprey oil (TSUJIMOTO), B., 636.
- Lantal, influence of ageing temperature on properties of (MEISSNER), B., 16.
- Lanthanum hydroxide as an adsorbent (KLEEBERG), A., 468.
 sesquioxide, crystal structure of (ZACHARIASEN), A., 1195.
 sodium sulphate (ZAMBONINI and CAROBBI), A., 137.
- Lapachol (RECORD), A., 1281.
- Lard, influence of saturated fatty acids on the value of the Boemer number for (MUSCHTER and SMIT), B., 637.
 rancid, inactivation of vitamin-A by (POWICK), B., 382.
 detection of tallow in (MUSCHTER and VISSER), B., 678.
- Latex from various plants, constituents of (ULTÉE), A., 1066.
 artificial, resembling caoutchouc latex (CHEN), A., 815.
- Lauric acid, wax esters of (GRÜN, ULBRICH, and KREZIL), A., 597.
- Lauroylresorcinol (KLARMANN), A., 1135.
- Laurus nobilis, essential oil of (MORANI), B., 645.
- Lauryl alcohol, naphthylurethane from (BICKEL and FRENCH), A., 517.
- Lavender oil, Irish (REILLY, DRUMM, and BOYLE), B., 462.
- Leaches, acid ore, removal of silica from (HOSENFELD and SIEMENS & HALSKE), (P.), B., 369.
- Leaching of solid or semi-solid materials, apparatus for (RAARE), (P.), B., 459.
- Lead in rocks and ores, origin of (HOLMES), A., 449.
 structure of (COLLINS), A., 221.
 manufacture of (CORNELIUS and TROLLHÄTTANS ELEKTROTHERM. AKT.), (P.), B., 97*.
 refining of (DAVIS), (P.), B., 134; (HARRIS), (P.), B., 283*;
 (SCHLEICHER and AMER. METAL Co.), (P.), B., 591.
 purification of alkali liquors obtained in (HARRIS), (P.), B., 236.
 desilverisation of, by Parkes' process (WILLIAMS), B., 93.
 recovery of, from bronze scrap and residues (LEWIN), (P.), B., 369.
 from zinc-lead ores (SOC. GÉN. MÉTALLURGIQUE DE HOBOKEN), (P.), B., 675.
 from lead-zinc sulphide ores (LANGGUTH), (P.), B., 952.
 recovery of silver and, from sulphide ores, etc. (HEX), (P.), B., 330.
 recovery of zinc and, from ores (H. & P. FAIVRE), (P.), B., 330.
 treatment of mixed sulphide ores of zinc and (CHRISTENSEN), (P.), B., 330.
 volatilisation of, during lead burning, using different flames (ENGEL and FROBOESE), B., 281.
 spectrum of, in a magnetic field (VAN DER HARST), A., 874.
 Zeeman effect in spectrum of (BACK), A., 767.
 absorption spectrum of the vapour of (FRAYNE and SMITH), A., 550.
 arc spectrum of (SUR), A., 986; (GIESELER and GROTRIAN), A., 1186.
 explosion spectrum of (ARAKATSU), A., 875.
 isotopes of, and its atomic weight (RICHARDS, KING, and HALL), A., 771.
 effect of sunlight on radioactivity of (MARACINEAU), A., 6, 879.
 cathodic deposition of (FRÖHLICH, CLARK, and ABORN), A., 804.
 coating of iron or steel with (HILL), (P.), B., 590.
 allotropy of (TRAVERS and HOUOT), A., 893.
 transmutation of (SMITS), A., 106.
 liquid, surface tension of (BIRCUMSHAW), A., 895.
 colloidal (STENSTRÖM and REINHARD), A., 1017.
 and lead chloride, equilibria of tin and tin chloride with (LORENZ, FRAENKEL, and GANZ), A., 799.
 and its suboxide, mixed powder of (SHIMADZU), (P.), B., 539*.
 deposits, electrochemical and X-ray studies of (FRÖHLICH, CLARK, and ABORN), B., 494.
 poisoning. See under Poisoning.
- Lead alloys (VAUTIN and STEPHENS), (P.), B., 952.
 for cable covering (SUNDIUS), (P.), B., 833.
 solder for joining, to iron, bronze, etc. (METALL-VERARBEITUNGSGES.), (P.), B., 331.
 hard (MATÉRIEL TÉLÉPHONIQUE), (P.), B., 245.
 with antimony (DEAN, HUDSON, and FOGLE), B., 93; (GEPFERT), (P.), B., 590.
 with antimony and tin, separation of tin and antimony from (LIDLE), B., 327.

- Lead alloys with cadmium, density of (SAUERWALD), A., 786.
 with mercury (MILLER), (P.), B., 496.
 with silver, electrolysis of (KREMAN and BAYER), A., 802.
 with tin, mixed, manufacture of (THEWS), B., 883.
 with tin and antimony, hardening of (GUILLET), B., 588.
 with zinc and silver (WILLIAMS), B., 93.
- Lead compounds, manufacture of (WEMPLE and AMER. ZINC, LEAD, & SMELTING CO.), (P.), B., 755.
 recovery of, from old accumulators (FESSIA), (P.), B., 794.
 absorption and excretion of (BEHRENS), A., 92.
- Lead arsenate, manufacture of (MITCHELL and TOABE), (P.), B., 156.
 formation and stabilisation of suspensions of (WOODMAN), B., 139.
 arsenates, preparation of (CAMBI and BOZZA), B., 191.
 electrochemical preparation of (ORMONT), A., 919.
 hydrogen arsenate, mineral form of (SPENCER), A., 1022.
 arsenites, electrochemical preparation of (ORMONT), A., 919.
 borates (MAZZETTI and DE CARLI), A., 809.
 bromide, heat capacity and entropy of (LATIMER and HOEN-SHEL), A., 232.
 carbonate, manufacture of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 237.
 dissociation of (CENTNERSZWER and AWERBUCH), A., 1107.
 carbonate, basio (*white lead*), manufacture of (TOLMAN and NAT. LEAD CO.), (P.), B., 554*.
 chloride, electrolysis of (SAXON), A., 251.
 reduction of, by hydrogen (PARRAVANO and MALQUORI), A., 799.
 use of, in purification of physiological fluids for investigation of alkaloids (MAGNIN), A., 1273.
- Plumbo ammonium chloride (SREYEWETZ and TATU), A., 589.
- Lead chromate, influence of light on rhythmic precipitation of (HATSCHKE), A., 20.
 formation of fibrous structures in precipitation of, in gels (MORÁVEK), A., 20.
 dichromate, manufacture of (MILBAUER), B., 787.
 halides, equilibria of potassium halides, water, and (BURRAGE), A., 908.
 hydrides (WEEKS), A., 137.
 iodide, crystal structure of (VAN ARKEL), A., 781; (TERPSTRA and WESTENBRINK), A., 890.
 solubility of, in solutions of sodium chloride (BURRAGE), A., 898.
 molybdate, isomorphism of, with rare-earth molybdates (ZAMBONINI and LEVI), A., 13.
 suboxide (AUFENAST and TERREY), A., 811.
 as pigment (BLOM), B., 247.
 monoxide (*litharge*), manufacture of (HALL), (P.), B., 439, 584; (SHIMADZU), (P.), B., 539*.
 apparatus for (WARING), (P.), B., 744.
 production of, from storage-battery plates (EVANS), (P.), B., 247.
 influence of degree of dispersity of, on use as drier (HEBLER), B., 99.
 dioxide, crystal structure of (VAN ARKEL), A., 460.
 reactions of, with metallic oxides in the solid state (DE CARLI), A., 811.
- Triplumbo tetroxide (*red lead*), determination of iron in (SACHER), B., 631.
 determination of iron in, colorimetrically, in presence of bismuth (HEINRICH and HETRICH), B., 372.
- Lead nitrate, complex formation in solutions of (GLASSTONE and RIGGS), A., 126.
 alkali pyrophosphates (ROSENHEIM, FROMMER, GLÄSER, and HÄNDLER), A., 696.
 sulphate, manufacture of (SMITH), (P.), B., 488*.
 sulphide, equilibria in roasting of (SCHENCK), B., 589, 951.
 sulphite, manufacture of (SMITH), (P.), B., 488*.
 vanadate (EPHRAIM and BECK), A., 371.
- Lead organic compounds, partition of, after injection (EHRENBERG), A., 431.
- Lead butyls (DANZER), A., 388.
 resins (COFFIGNIER), B., 553.
 tetra-alkyl, preparation of (CALCOTT and DU PONT DE NEMOURS & Co.), (P.), B., 76.
 tetraethyl, manufacture of (MEAD and GEN. MOTORS CORP.), (P.), B., 299.
 regulations for manufacture and use of (ANON.), B., 619.
 retardation of ignition by (DUMANOIS), B., 619.
- Lead organic compounds:—
 Lead tetraethyl, risks of poisoning from use of, in motor fuels (ANON.; FLINN), B., 260.
 effects of, on deterioration of turbine oils (HATTA), B., 307.
 determination of, in motor fuels (FERRERI), B., 181.
- Lead determination and separation:—
 determination of, colorimetrically (BERNOULLI), A., 1116.
 determination of, iodometrically (KRAUS), A., 592.
 determination of, microchemically (GILMANN and HÖLTJE), A., 591.
 determination of, radiometrically (EHRENBERG), A., 328.
 determination of, volumetrically, with arsenates (JELLINEK and CZERWINSKI), A., 262.
 determination of, in faeces by the chromate method (ANON.), A., 592.
 determination of, in preserves and their containers (OWE), B., 606.
 determination of silver in (DONATH), A., 491; (EVANS), B., 278.
 separation of (MANCHOT, GRASSL, and SCHREEBERGER), A., 40.
 separation of antimony and (MARKS and AMER. SMELTING & REFINING CO.), (P.), B., 635.
 separation of silver and (VORTMANN and HECHT), A., 262; (VORTMANN), A., 1019.
- Lead accumulators. See under Accumulators.
- Lead anodes. See under Anodes.
- Lead cells. See under Cells.
- Lead ores, electrolysis of (SAXON), B., 17.
 roasting of (JÄNECKE), B., 883.
 treatment of (CLARK), (P.), B., 62.
 manufacture of sulphuric acid from gases from roasting of (HEYER), B., 190.
- Lead pipes, action of water on (THRESH and BEALE), B., 468.
- Lead wire, glowing of (DAMIANOS), A., 637.
- Lead-zinc ores containing sulphur, treatment of (ASHCROFT), (P.), B., 1018*.
 of Eastern Canada, concentration of (PARSONS), B., 672.
- Leather, manufacture of (PICKARD, LLOYD, and CAUNCE), (P.), B., 101; (McCANDLISH and ATKIN), (P.), B., 206*.
 chemico-histological study of (TURLEY), B., 453.
 biochemical problems in (SADIKOV), B., 891.
 analytical standards for (GOLDENBERG), B., 334.
 effect of splitting on tensile strength of (WILSON and KERN), B., 376.
 dyeing of. See under Dyeing.
 finishing and colouring of (LAMB and SPENCE & SONS), (P.), B., 926.
 japanning of (LATTEY), B., 377.
 tanning of (JORDAN), (P.), B., 101.
 characterisation of (GANSER), (P.), B., 891.
 examination of (POVARNIN and SCHICHIREV), B., 683.
 sampling of (BENNETT), B., 454.
 removal of acid from (HITSCHMANN), (P.), B., 206.
 destructive action of sulphuric and hydrochloric acids on (WILSON), B., 206.
 extraction of chromium from (MASNER and BERESTOVJ), B., 958.
 comparative resiliency of heels of rubber and of (WILSON), B., 138.
 detection of, in fertilisers (JORET and RADET), B., 505.
 preparation of, for analysis (BALDERSTON; ORTHMANN), B., 138.
 determination of fat in (WOODROFFE), B., 926.
 determination of fat and water-soluble matter in (COLIN-RUSS), B., 70.
 determination of moisture in (VEITCH and JARRELL), B., 926.
 determination of degree of tannage of, by water resistance (GERNGROSS and GORGES), B., 957.
- Leather, artificial, fifty years of (GIVEN), B., 839.
 production of (TAYLOR and TAYLOR LABORATORIES), (P.), B., 340.
 bookbinding, deterioration of (VEITCH, FREY, and LEINBACH), B., 455.
 calf, variation in tensile strength of, with humidity (WILSON and KERN), B., 557.
 chamois, importance of free fatty acids in fish oils used for production of (KLENOW), B., 599.
 chrome, hydrolysis of acid sulphate in (WILSON and LINES), B., 600.
 manufacture of glue from (ELLENBERGER & SCHRECKER and HUPPERT), (P.), B., 600.

- Leather, chrome, analysis of (INNES), B., 168.
 deformation of chromic oxide in (CAREGGIO and BUSSINO), B., 716.
 chrome-tanned, preparation of, for dyeing (PICKARD, LLOYD, and CAUNCE), (P.), B., 101.
 acidity of (ORTHMANN), B., 206.
 extraction of chromium from, with sodium potassium tartrate (BERESTOVJOV and MASNER), B., 1021.
 heavy, stuffing of (PICKARD, LLOYD, and CAUNCE), (P.), B., 138.
 coloured patent, manufacture of (SNYDER-WELCH PROCESS CORP.), (P.), B., 1022.
 decorative, production of (ZIMMER and LEDERWERKE M. ZIMMER A.-G.), (P.), B., 1022.
 gas-tanned (PICKARD, LLOYD, and CAUNCE), (P.), B., 101.
 shoe, properties of (WILSON and DAUB; WILSON and LINEAR), B., 504; (WILSON and GUETTLER), B., 556; (WILSON and KERN), B., 798, 839.
 micro-structure of (WILSON and DAUB), B., 504.
 composition of (WILSON and LINEAR), B., 504.
 strength, stretch, and stitch tear of (WILSON and DAUB), B., 600.
 shoe upper, testing of (ROGERS), B., 69.
 sole, bleaching of (RAISOR), (P.), B., 683.
 chrome- and vegetable-tanned, comparative durability of (BOWKER and GEIB), B., 334.
 Leather insole bellies, vegetable-tanned, wear-resistance of (WOODROFFE), B., 989.
 Leather stock, production of pyrrole and its derivatives and pyrocoll from (MICHELMAN), (P.), B., 463.
 Leather waste, recovery of chromium from (ELLENBERGER and SCHRECKER), (P.), B., 683.
 chrome, treatment of, for manufacture of glue (MEIER), (P.), B., 335.
 Leaves, action of radium rays on excrescences of (ROUPPERT and JEDRZEJOWSKI), A., 647.
 carbohydrates and amino-acids in respiration of (SPOEHR and MCGEE; SPOEHR), A., 1182.
 relation between carbohydrates and water content in (AHRNS), A., 1065.
 cytoplasm of the cells of (CHIBNALL and GROVER), A., 441.
 proteins of cytoplasm of (CHIBNALL), A., 548.
 variation of organic and mineral constituents of, during autumn fading (COMBES and ECHEVIN), A., 872.
 rôle of starch deposits in (LUBIMENKO), A., 647.
 green, variations in carbohydrates in (STANESCU), A., 439.
 green, yellow, and red, chemistry of (COLIN and GRANDSIRE), A., 209.
 Lecithin, preparation of, from eggs (BARRO), B., 564.
 pure, production of (BOEHRINGER SOHN and DENGLE), (P.), B., 692.
 effect of light on permeability of (BECKING and GREGERSEN), A., 254.
 flocculation of suspensions of (RONA and DEUTSCH), A., 792.
 glycerolphosphoric acids from (KARRER and SALOMON), A., 384.
 Lecithins, synthesis of (GRÜN and LIMFÄCHER), A., 827.
 influence of, on action of drugs (LAVROV), A., 201.
 Lecithins, bromo- (LEVENE and ROLF), A., 635.
 Lecithiburin (PONCE), A., 970.
 Leduo effect (HALL), A., 114.
 Legumes, form of nitrogen of, assimilated by non-legumes grown in association (STALLINGS), B., 601.
 effect of sulphur on nitrogen content of (NELLER), B., 208.
 Legumin (RAKUZIN and PEKARSKAJA), B., 460.
 of sweet almonds (RAKUZIN and MASCHKELEISSON), B., 510.
 Leguminoase, nitrogen in (RIFFEL and LUDWIG), A., 439.
 indicators for study of nodule organisms of (STEVENS), A., 647.
 Lehnertite, identity of ludlamite with (BERMAN), A., 709.
 Lemons, composition of septa of (FICHERA), B., 171.
 vitamin-B in rind of (WILLMOTT), A., 437.
 Lemon-grass. See *Andropogon citratus*.
 Lemon juice, extraction of citric acid from (MELIS), B., 690.
 direct crystallisation of citric acid from (AJON), B., 214.
 manufacture of citric acid and its calcium salt from (MELIS), B., 995*.
 antiscorbutic fraction of (DAUBNEY and ZILVA), A., 1181.
 Lemon rind, vitamin-C in (WILLMOTT and WOKES), A., 1181.
 Lemon-tree (*petilgrain*), essential oil from leaves and twigs of (LIOTTA), B., 340.
 Lenses, protective (BUSCH A.-G. OPTISCHE IND.), (P.), B., 789.
 Leprosy, blood in (PARAS), A., 1054.
Lepospermum scoparium, essential oil of (SHORT), B., 511.
 Leucine, dry distillation of (WASER), A., 65.
 solubility of (SANO), A., 345.
dl-Leucine, butyl esters, and their salts (MORGAN), A., 276.
 glyceryl ester (FONOR), A., 716.
 Leucite, potash and alumina from (S.I.P. Soc. ITAL. POTASSA), (P.), B., 487.
 alumina and potassium salts from (GIORDANI and POMILIO), (P.), B., 538.
 preparation of fertilisers from (ORMANDY and PEAKE), (P.), B., 52.
 Leucite rocks, elimination of iron from solutions of (POMILIO, GIORDANI, and POMILIO BROS. CORP.), (P.), B., 13.
 Leucocytes. See Blood corpuscles, white.
 Leucopterin, and its salts (SCHÖFF and WIELAND), A., 1168.
 Leucotrope. See Phenylbenzylidimethylammonium chloride.
dl-Leucyl- γ -aminobutyric acid, and its action with yeast (ABDERHALDEN, PIEFER, and TATEYAMA), A., 545.
N-*dl*-Leucyl-*dl*- α -amino- δ -hydroxyvaleric acid (ABDERHALDEN and SICKEL), A., 748.
 Leucylarsanilio acid (GIEMSA and TROPP), A., 1162.
 Leucylasparagine anhydride (ABDERHALDEN and ROSSNER), A., 603.
dl-Leucyl-*d*-glutamide anhydride (ABDERHALDEN and ROSSNER), A., 603.
l-Leucyl-*d*-glutamic acid, and its anhydride, from tryptic digestion of gliadin (ABDERHALDEN), A., 852.
dl-Leucyl-*d*-glutamic anhydride, and its ethyl ester (ABDERHALDEN and ROSSNER), A., 603.
 Leucylglycyl anhydride, desmotropy of (ABDERHALDEN and SCHWAB), A., 306.
 Leucylglycylarsanilio acid, calcium salt (GIEMSA and TROPP), A., 1162.
l-Leucylglycyl-2:5-diketo-3:6-dimethylpiperazine (ABDERHALDEN and SCHWAB), A., 1260.
 Leucylglycyl-leucine anhydride. See *iso*Hexoyl-2:5-diketo-3-*iso*-butylpiperazine, 1- α -amino-.
l-Leucylproline, methylation of (ABDERHALDEN and SICKEL), A., 1235.
 Lichens, constituents of (PFAU), A., 836.
 sugars in (VOTOČEK and BURDA), A., 501.
 Lichenase of barley malt (FRINGSHEIM and BEISER), A., 976.
 Lichenin, Röntgen-ray structure of (ORT), A., 387.
 compared with that of cellulose (HERZOG), A., 563.
 digestibility of (WALLERSTEIN), A., 318.
 triacetate (HESS and SCHULTZE), A., 715.
 Lichohexosan, and its triacetate (BERGMANN and KNEHE), A., 714.
 Liesegang's rings (HATSCHER), A., 20; (JABECZYŃSKI and KOBRYNER), A., 473; (JABECZYŃSKI), A., 1100.
 formation of, in gels (OSTWALD; CHATTERJI and DHAR), A., 1202.
 secondary, formation of (DUNIN and SCHEMJAKIN), A., 675.
 Light, new source of (SCHÜLER), A., 215.
 emission of, by excited atoms and molecules (TERENIN), A., 776.
 body of high (LAISE and ELECTRON RELAY Co.), (P.), B., 198.
 from excitation of phosphors by cathode rays (KORDATZKI, SCHLEUDE, and SCHROETER), A., 777.
 depolarisation of, by organic compounds (CABANNES and GRANIER), A., 559.
 gyration of, by multiplet lines (DARWIN), A., 994.
 mechanics of the quanta of (SCHAPOSCHNIKOV), A., 451.
 theory of absorption of (BIALOJESKI), A., 451.
 diffusion of, in liquids (ROCARD), A., 456.
 scattering of, by liquids (KITCHING; SWEITZER; MARTIN), A., 15.
 Rayleigh formula for (STEWART), A., 228.
 by saturated vapours (EWING), A., 230.
 polymerisation by (STOBBE and LEHFELDT), A., 64.
 physiological action of (KOCH and REED; MAYERSON, GUNTHER, and LAURENS), A., 319; (FALK and REED), A., 431; (REED and TWEEDY), A., 541.
 relation of, to life and health (PRICE), A., 871.

- Light**, infra-red, photochemical inactivity of (DANIELS ; TAYLOR), A., 485.
 polarised, excitation of, by electron impact (SKINNER), A., 1074.
 ultra-violet, production of, by impact of electrons on metals (BRICOUT), A., 218.
 electrodes for (M. A. and V. ARNONE), (P.), B., 371.
 new absorbent for (SUZUKI and SAKURAI), (P.), B., 76.
 absorption of, by amino-acids and ceratose (MARCHLEWSKI and NOVOTNOVNA), A., 222.
 production of catalytic phenomena by means of (ROUSSEAU), (P.), B., 406.
 transparency of alkali-limo glass to (SUGIE), B., 54.
 action of, on hide powder (THOMAS and FOSTER), B., 69.
 exposure of liquids to (QUARZLAMPEN-GES.), (P.), B., 247.
 effect of, on metabolism (CAMPBELL), A., 755.
 Wood, use of, in chemical and volumetric reactions (MELLET and BISCHOFF), A., 813.
- Light-filters** for polarimetry (SCHOORL), A., 142 ; (SCHULZ), A., 593.
 chlorine (TAYLOR), A., 1223.
 Oldenberg chlorine (VILLARS), A., 919.
 ultra-violet (WINTHER and MYNSTER), A., 493.
- Lightning**, mechanism of discharge of (TERADA, NAKAYA, and YUMOTO), A., 653.
- Lignification** (MEHTA), A., 209.
- Lignin** (FRIEDRICH and BRÜDA), A., 824 ; (FRIEDRICH and DRÜWALD ; KÜSTER and SCHNITZLER), B., 151.
 solubility of, in phenols (HILLMER), B., 46.
 thermal decomposition of, in presence of catalysts and hydrogen under pressure (BOWEN and NASII), B., 474.
 comparative distillation of cellulose, deresinified wood, and under diminished pressure (FISCHER and TROPSCH), B., 859.
 use of, for decolorisation and purification of solutions (INTERNAT. SUGAR & ALCOHOL Co.), (P.), B., 256.
 comparison of the permanganate and phloroglucinol tests for (SIERSCH), A., 1231.
 detection of different types of hydroxyl groups in (FREUDENBERG and HESS), A., 935.
 determination of (PALOHEIMO), B., 152 ; (VENKATESWARAN), B., 268.
 nature of, and its determination in timber (MEHTA), A., 209.
 determination of, in wood and wood cellulose (MÜLLER and HERRMANN), B., 435.
- Lignite**, definition of the term (STADNIKOV and PROSEKURNINA), B., 729.
 formation of, from conifer residues (GROSSKOPF), B., 939.
 dehydration of (SCHOCH), (P.), B., 350.
 distillation of (HENEAOE), (P.), B., 308.
 apparatus for (NEUMAIER and LIGNITE PRESSED COAL Co.), (P.), B., 524.
 in presence of hydrogen under pressure and catalysts (FIERZ-DAVID and HANNIG), B., 35.
 and recovery of the volatile sulphur (SEIDENSCHNUR), (P.), B., 654.
 cyclopentanone in the distillation products of (VORLÄNDER and GÖRNANDT), B., 906.
 dressing of (FRANK), (P.), B., 701.
 humic substances in (KAUNERT), B., 858.
 transformation of, into fuel of calorific value (DEBAUCHE), (P.), B., 777.
 extraction of wax from (MAILIE), (P.), B., 574.
 Canadian, effect of varying humidities on (NICOLLS), B., 697.
 Rumanian, utilisation of, and its distillation at low temperatures (DANAILA and BLUM), B., 652.
 soft, manufacture of stains and lacquers from (EHRENBERG, WIEDERHOLD, KRTG, HOLSBOER, FISCHER, and STUDIENGES. F. AUSBAU DER IND.), (P.), B., 414.
 determination of water in (WOOD and NEALE), B., 36.
- Lignites**, extraction of, with tetralin (BERL and SCHMID), B., 652.
 treatment of, to improve their calorific value (BONE), (P.), B., 780*.
- Lignite tar**. See under Tar.
- Lignoceric acid** from arachis oil (HOLDE and GODBOLE), A., 268.
- Lignone derivatives**, manufacture and application of (CROSS and ENGELSTAD), (P.), B., 533.
- Lilium tigrinum***, pollen of (DUCLOUX), A., 982.
- Lime**. See Calcium oxide.
- Lime juice**, manufacture of calcium citrate and citric acid from (WARNEFORD and HARDY), B., 106.
- Lime seed oil** (MARSHALL and SALAMON), B., 552.
 and oilcake (COLLENS), B., 987.
- Lime-kilns** (MISCAMPBELL), (P.), B., 320.
 factors governing capacity and fuel economy of (AZBE), (P.), B., 154.
 electrically heated (SIEMENS & HALSKE, GROSS, and STADL-HUBER), (P.), B., 331.
- Limestone**, composition of (MEIGEN), A., 933.
 treatment of (MATHERS and BRISCOE), (P.), B., 708.
 burning of (KIDDLE), (P.), B., 876.
 shaft-furnaces for (CORNET), (P.), B., 320.
 rate of calcination of (GILKEY), B., 707.
 elimination of, from clays (HORNING), B., 361.
 enrichment of ores containing (BACHILOV), (P.), B., 885.
 disintegration of, in soil (MACINTIRE and SHAW), B., 24.
 ferruginous, utilisation of, in coke ovens and gas producers (SCHNEIDER), (P.), B., 351.
- Limonite**, fibrillar, identity of goethite and (GAUBERT), A., 42.
- Limulus***, urease in blood and tissues of (LOEB and BODANSKY), A., 434.
- Linden**. See *Tilia platyphyllos*.
- Lindera hypoglauca***. See "Kuromoji."
- Linen fibres**, action of solutions of sodium sulphide on (VICTOROV), B., 659.
- Lingustrum vulgare*** (privet), chemistry of bark of (ZELLNER), A., 1281.
- Linking**, methods of (LUX), A., 887.
- Linkings**, semi-polar double, existence of (LOWRY), A., 457.
- Linnæite**, identity of carrollite with (SHANNON), A., 709.
- Linoleic acid**, potassium and sodium salts, conductivity and surface tension of (BHATNAGAR, PRASAD, and SINGH), A., 477.
- Linolenic acids**, isomeric (EIBNER and REITTER), B., 593.
- Linoleum**, manufacture of (SCHICHT and EISENSTEIN), (P.), B., 67 ; (LOBSITZER A.-G. and DUBSKY), (P.), B., 202 ; (DUBSKY), (P.), B., 333*.
 comparison of triolin and (SIMON), B., 21.
- Linoleum cement** (SLANSKY and DEUTS. LINOLEUM-WERKE HAUSA), (P.), B., 451.
- Linseed**, determination of fat in (ZANDER), B., 835.
- Linseed oil**, change of refractive index of, in drying (LAURIE), B., 795.
 polymerisation of (BAUER), B., 637.
 in the form of its soap (PETROV and DILIAKOV), B., 712.
 oxidation of (DE WAELE), (P.), B., 415 ; (CHATTERJI and FINCH), B., 923 ; (ROGERS and TAYLOR), B., 986.
 effect of carbon pigments on rate of oxidation of (RHODES and GOLDSMITH), B., 679.
 effect of iron oxide pigments on rate of oxidation of (RHODES and COOPER), B., 99.
 effect of zinc oxide pigments on rate of oxidation of (RHODES and MATHES), B., 201.
 action of sulphur on (WHITBY and CHATAWAY), B., 551.
 fractional extraction of zinc salts of acids from, by alcohol (AGDE), A., 269.
 crystalline bromides from (TOMS), B., 794.
 detection of, in soya-bean oil (CARRIÈRE), B., 678.
 detection of rosin in (WOLFF), B., 66.
- Lipase** (MCGINTY and LEWIS), A., 640.
 synthetic action of (GROEN), A., 977.
 activity of, in tissues at different ages (NOYES, FALK, and BAUMANN), A., 757.
 poisoning of, by quinine and atoxyl (RONA and GYOTOKU), A., 432.
 hydrolysis of asymmetric esters by (DAWSON, PLATT, and COHEN), A., 865.
 kinetics of ester hydrolysis by (KNAFFL-LENZ), A., 132 ; (ARRENTIUS), A., 133.
 effect of dispersion of substrate on hydrolysis by (RONA and KLEINMANN), A., 977.
 activity of, in blood (PINCUSSEN and COELHO), A., 94.
 in blood, effect of metallic salts on (WALBUM and BERTHESEN), A., 202.
 of pregnant women (CLAUSER), A., 94.
 in autolysis of liver (KOSTERLITZ and PETROW), A., 1059.
 in tissues (RONA and LASNITZKI), A., 866.
 liver, ester hydrolysis by (NOGAKI), A., 541.
 pancreatic, effect of quinine preparations on action of (SMORODINCEV and DANILOV), A., 94, 202.

- Lipase, pancreatic, detection of, in serum, and its inhibition (JEDLIČKA and KREISINGER; JEDLIČKA), A., 860.
 serum, action of urethanes on (RONA and LASNITZKI), A., 202.
 determination of, in pine seeds (NICOLAI), A., 1059.
- Lipases in secretory organs, and their resistance to quinine and atoxyl (HERZFELD and ENGEL), A., 94.
- Lipins, effect of dextrose on colloidal equilibria of (NECHKOVITCH), A., 537.
 action of basic dyes on (SCHUMACHER), A., 324.
 in the chromocytes of blood (GORTER and GREDEL), A., 855.
 in serum (LAPPONI), A., 1051.
 excretion of (SPERRY), A., 859.
 determination of, in proteins of horse plasma (THEORELL), A., 1166.
- Lipochromes in bacteria (READER), A., 204.
- Lipoids, separation of, from ovaries and similar organs (FELLNER), (P.), B., 341.
- Liquefaction and separation of mixed gases (MEWES), (P.), B., 968.
- Liquids, chemical constants and critical magnitudes of (HOLZSCHMIDT), A., 233.
 relation between properties of (HERZ), A., 462.
 effect of drying on physical properties of (MALI), A., 117.
 diffusion of light in (ROCARD), A., 456.
 exposure of, to ultra-violet rays (QUARZLAMPEN-GES.), (P.), B., 247.
 electrical treatment of (ANDERSON and INTERNAT. PRECIPITATION Co.), (P.), B., 447.
 accurate measurement of electrical conductivity of (MORGAN and LAMMERT), A., 686.
 potential differences at the junction of (VOSNESSENSKI), A., 30; (VOSNESSENSKI and ASTACHOV), A., 129; (CARTER and LEA), A., 688.
 photo-electric properties of surface layers of (ZIMMERMANN), A., 886.
 motion of ions in (CASSEN), A., 1104.
 dielectric constants of (MATSUIKE), A., 140; (SAYCE and BRISCOE; WALDEN, ULICH, and WERNER), A., 1193.
 heat of vaporisation of (MATHEWS), A., 462.
 association of, and the relation between heat of vaporisation and capillary constant (DE KOLOSOVSKI), A., 1008.
 interchange of heat between (SODERLUND, GRAM, and TECHNO-CHEMICAL LABS.), (P.), B., 616.
 heating of, electrically (OESTERR. CHEM. WERKE), (P.), B., 591.
 by direct contact with combustion products (SMITH), (P.), B., 32.
 by introduction into molten metal (RIDER, WATTS, and THERMAL INDUSTRIAL and CHEMICAL (T.I.C.) RESEARCH Co.), (P.), B., 1000*.
 apparatus for heating and boiling of (BLAIR, CAMPBELL, & McLEAN and WEBSTER), (P.), B., 619.
 hot, discharging of, from a container under pressure (FARB. v. BAYER & Co.), (P.), B., 304.
 cooling of, to form powdered or granular solids (GUTTIN), (P.), B., 449*.
 apparatus for (DUNKELBERG), (P.), B., 650.
 process for obtaining, in solid form (I. G. FARBENIND.), (P.), B., 1029.
 structural turbulence of (REINER), A., 1199.
 thermal agitation in (FRENKEL), A., 338.
 "bumping," apparatus for (SIEMENS-SCHUCKERTWERKE (P.), B., 647.
 rectification of (ZITZKE), (P.), B., 729.
 coefficients of expansion of (HERZ), A., 463.
 apparatus for determination of density of (TRENITÉ), B., 935.
 density and molecular diameter of (SHAXBY), A., 458.
 variation of density of, with temperature (PREDVODITELEV), A., 669.
 measurement of vapour pressure of (JOLLY and BRISCOE), A., 1021.
 internal pressure and expansion of (HERZ), A., 670, 1000.
 relation between expansion and compressibility of (VRKLIJAN), A., 786.
 viscosity of (DUCLAUX and ERRERA), A., 895.
 kinetics of (SATO), A., 234.
 surface tension and viscosity of (SHARMA), A., 464.
 effect of gases on the surface tension of (TAMAMUSHI), A., 1093.
 kinetic phenomena at surfaces of (KARCZAO and ROBOZ), A., 120.
 forces at interfaces between gases and (FRUMKIN, DONDE, and KULYARSKAYA), A., 1092.
- Liquids, spreading of, on liquid surfaces (BURDON), A., 348.
 surface orientation of molecules in (SUGDEN), A., 1094.
 atomisation of (AKKERMAN), (P.), B., 729.
 containing solid matter (MULLER), (P.), B., 650.
 molecular changes in (ANTONOV), A., 786.
 velocity of sound in (IONESCO), A., 341; (SATTERLY), A., 785.
 concentration of (HARRIS and INDUSTRIAL DRYER CORP.), (P.), B., 81.
 apparatus for (ANTISELL), (P.), B., 34.
 mixing of (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 177.
 purification of, by adsorption (PRUTZMAN, BENNISON, and GENERAL PETROLEUM CORP.), (P.), B., 937.
 centrifugal purifiers for (DE LAVAL CHADBURN Co., LTD. and CHADBURN), (P.), B., 649.
 non-aërating apparatus for centrifugal purification of (HALL and DE LAVAL SEPARATOR Co.), (P.), B., 33.
 purification, filtration, decolorisation, and deodorisation of (BRANCO), (P.), B., 304, 776*.
 sterilisation of (SIEMENS & HALSKE and ERLWEIN), (P.), B., 470.
 sterilisation and clarification of (McCOMB and HEYMAN), (P.), B., 606.
 counter-current washing of (SMITH), (P.), B., 80.
 treatment of, with active charcoal (N.V. ALGEM. NORIT MAATSCHAPPIJ), (P.), B., 223.
 apparatus for absorption of gases in (HOWARD and GRASSELLI CHEMICAL Co.), (P.), B., 114.
 treatment of, with gases (CHEM. FABR. NIEDERRHEIN GES. and ULLMANN), (P.), B., 2; (GREENAWALT), (P.), B., 473, 567; (BRITISH OXYGEN Co. and HOUSEMAN), (P.), B., 616.
 apparatus for (FARB. FORM. BAYER & Co.), (P.), B., 696*;
 (KIRKHAM, HULETT, & CHANDLER, LTD., HERSEY and STOKES), (P.), B., 728; (GREENAWALT), (P.), B., 1000.
 supersaturation of, with gases (CLARE), A., 18.
 treatment of materials with (RAMÉN), (P.), B., 495.
 recovery of solid constituents of (McLEOD), (P.), B., 392.
 mutual solubility of (HILL and MALISOFF), A., 571.
 dehydration of (ELSENBAST and CELITE Co.), (P.), B., 255.
 means for withdrawing and delivering measured quantities of (FROUDE, BOBY, and BOBY & Co.), (P.), B., 726.
 measurement of, in perfusion experiments (KOCHMANN), A., 212.
 separation of, of different densities (COMYN and WHITE), (P.), B., 426*;
 (PRIBRIGHT Co. and BEALE), (P.), B., 616*;
 (GREEN), (P.), B., 937.
 separation of, from solids (LAUGHLIN and LAUGHLIN FILTER CORP.), (P.), B., 568.
 apparatus for (BEHR), (P.), B., 649.
 anisotropic, scattering of light by (MARTIN), A., 15.
 Rayleigh formula for (STEWART), A., 226.
 electrical structure of molecules of (BAUER), A., 779.
 dipole theory of (ORNSTEIN), A., 225; (KAST), A., 779, 1194;
 (SZIVESSY), A., 888.
 binary, equilibria in systems of (ANGELESCU), A., 357.
 binary mixed (WEISSENBERGER, HENKE, and KATSCHINKA), A., 683;
 (WEISSENBERGER, HENKE, and KAWENOKI; WEISSENBERGER and SCHUSTER), A., 787.
 refractive indices of (ANOSOV), A., 234.
 magnetic susceptibility of (TRIFONOV), A., 234.
 dielectric constants of (WILLIAMS and KRCHMA), A., 1000.
 vapour pressure of (WEISSENBERGER, SCHUSTER, and ZACK), A., 570.
 viscosity and vapour pressure of (YAJNIK, BHALLA, TALWAR, and SOOFI), A., 235.
 surface tension and vapour pressure of (YAJNIK, SHARMA, and BHARADWAJ), A., 1000.
 solubility in (DISSELKAMP), A., 1089.
 binary isofluid mixed, viscosity of (UNKOVSKAJA and VOLOVA), A., 571.
 dielectric, distribution of potential in (KUSNETZOV), A., 248.
 passage of metallic ions through (KUSNETZOV and KUDRJAV-ZEVA), A., 247.
 influence of temperature on surface tension of (JUNG), A., 1094.
 elastic, capillary flow of (REINER), A., 678.
 fermented, determination of total solids in (ROTINGER), B., 210.
 immiscible, scouring temporary intimate contact between, without emulsification (JONES and SHARPLES SPECIALTY Co.), (P.), B., 397.

- Liquids**, inflammable, spontaneous ignition temperatures of (TANAKA and NAOAI), A., 1087.
 effect of anti-knock materials on spontaneous ignition temperatures of (TANAKA and NAOAI), B., 906.
 insulating, electrical precipitation of suspended particles from (SIEMENS-SCHUCKERTWERKE GES., SCHENKEL, MAYER, and HAHN), (P.), B., 886.
 mixed, molecular refraction and volume of (HERZ), A., 110.
 compressibility of (KAR), A., 118.
 distribution equilibria, dissociation, and electromotive force in (SIEGLER), A., 577.
 fractionation of (MERCK), (P.), B., 176.
 vacuum distillation of (SCHMALENBACH), (P.), B., 968.
 self-acting apparatus for mechanical separation of (HITCHON), (P.), B., 776.
 magnetic separation of (HAYNES and LINDE AIR PRODUCTS Co.), (P.), B., 472.
 separation of, by means of salts (SANDONNINI and GEROSA), A., 236.
 non-associated, molecular heats of, and their vapours (HOLZ-SCHMIDT), A., 232.
 organic, double refraction of (VORLÄNDER and WALTER), A., 110.
 heats of mixing of pairs of (HIROBE), A., 910.
 interfacial tensions of, against water and aqueous solutions (POUND), A., 789.
 translucency of unsized paper wetted with (BHATNAGAR, YAJNIK, PRASAD, and AHMED), A., 901.
 supercooled, dependence of viscosity on temperature in (TAMMANN and HESSE), A., 1198.
 ternary mixed, properties of (BRUN), A., 683.
 volatile, prevention of loss of, from storage tanks by evaporation (WILSON and STANDARD OIL Co.), (P.), B., 144.
Liquidambar orientalis, essential oil of, from Sukhum, Caucasia (KRASTELEVSKI), B., 340.
Liquors, alcoholic, determination of aldehyde in (BAILEY), B., 562.
Lithium, spectrum of (WALLER), A., 987.
 spark spectrum of (DIK), A., 873; (WERNER), A., 874.
 first spark spectrum of (SCHÜLER), A., 765.
 ionised, spectrum of (SUGIURA), A., 101.
 relative proportions of isotopes of (MORAND), A., 331.
 Stark effect for anode rays of (POIROT), A., 875.
 vapour, resonance of (BOOROS), A., 874.
 thermal conductivity of (BIDWELL), A., 1087.
 substitution of, for sodium in syntheses (ROJAIN and SCHULTEN), A., 506.
Lithium alloys with aluminium (ASSMANN), B., 244.
 effect of silicon in (ASSMANN), B., 831.
Lithium compounds, preparation of, pure (METALLBANK u. METALLURGISCHE GES., v. GIRSEWALD, and WEIDMANN), (P.), B., 13.
Lithium salts, recovery of, from phosphate minerals (WEIDMANN and ALLIED PROCESS CORP.), (P.), B., 708*.
Lithium borates (MAZZETTI and DE CARLI), A., 809.
 bromide, specific heat of (HÜTTIG and WEILLING), A., 1103.
 perchlorate, and chloride, freezing points of, in cyclohexanol (SCHREINER and FRIVOLD), A., 1208.
 carbonate, recovery of, from residual liquors containing potassium sulphate (METALLBANK & METALLURGISCHE GES.), (P.), B., 876.
 chlorate, hydrate of (BERG), A., 1014.
 chloride, conductivity of ions of (LORENZ and WESTENBERGER), A., 910.
 transport number of anion in (LORENZ and WESTENBERGER), A., 1008.
 transference numbers and ionic conductivities in (LORENZ and WESTENBERGER), A., 360.
 crystal structure of, and of its mixtures with magnesium chloride (BRUNI and FERRARI), A., 236.
 dissociation of, in absolute alcohol (DRUCKER and SCHINGNITZ), A., 911.
 fluoride, reflexion of X-rays by (HAVIGHURST), A., 780.
 residual rays from (REINKOBER), A., 1190.
 hydride, spectrum of (WATSON), A., 1079.
 hydroxide, activity coefficient of, in water and in lithium chloride solutions (HARNED and SWINDELLS), A., 245.
 nitride, formation of (FRANKENBURGER), A., 1214.
 polyselenide and polysulphide (BERGSTROM), A., 256.
 silicotungstate (FREUNDLER and MENAGER), A., 702.
Lithobillenic acid, and its trimethyl ester (WINDAUS), A., 724.
Lithobillanic acid, 13-hydroxy-, trimethyl ester (WINDAUS), A., 724.
alloLithobillanic acid, and its trimethyl ester (WINDAUS), A., 724.
isoLithocholic acid. See Cholic acid, 7-hydroxy-.
Lithopone (MITCHELL), (P.), B., 100*.
 mechanism of formation of (MANN), B., 200.
 manufacture of (FARBENF. VORM. BAYER & Co.), (P.), B., 22; (RICHARDSON), (P.), B., 788; (O'BRIEN and GLIDDEN Co.), (P.), B., 1021.
 drying of (GEWERKSCHAFT SACHTLEBEN), (P.), B., 595.
 treatment of, for use in paints (LERBERGHE), (P.), B., 680.
 crude, calcination of (KREBS and KREBS PIGMENT & CHEMICAL Co.), (P.), B., 595.
Lithopone paint, determination of asbestine in (GERMUTH), B., 21.
Liver, effect of ions on (HELANZAN), A., 426.
 physiology of (BOLLMANN, MANN, and MAGATH), A., 637, 1272; (MANN, SHEARD, BELLMAN, and BALDES), A., 857; (COLLENS, SHELLING, and BYRON), A., 1271.
 function of (MCCLURE, VANCE, and GREENE), A., 194.
 periodicity of constituents of, with ago (EHRENBERG), A., 193.
 respiration and carbohydrate exchange in (TAKANE), A., 754.
 effect of extracts of, on blood pressure (JAMES, LAUGHTON, and MACALLUM), A., 319.
 bromolecithins of (LEVENE and ROLF), A., 635.
 influence of insulin on glycogen and sugar formation in (BINDI; CHAIKOFF), A., 1063.
 hexosediphosphatase of (BRUGSCH, CAHEN, and HORSTERS), A., 197.
 β -hydroxybutyric acid in (SNAPPER and GRÜNBAUM), A., 1167.
 formation of lactic acid in (BRUGSCH, HORSTERS, and NARITA), A., 198.
 lipolytic power of, in autolysis (KOSTERLITZ and PETOW), A., 1059.
 stimulation of, by lymphagogues (ABE), A., 195.
 phosphatides in, during autolysis (ARTOM), A., 201.
 production of sugars in (BURN and MARKS), A., 1055.
 frog's, effect of alcohols on sugar formation in (LESSER), A., 766.
 of mammals, unsaturated hydrocarbon and its derivatives from (CHANNON and MARRIAN), A., 638.
Lixivation, vessels for (AKTIESELSKAPET KRYSTAL and A./S. DE NORSKE SALTVERKER), (P.), B., 31.
Lobelin, constitution of (SCHOPF and BOETTCHER), A., 744.
Lobelia, alkaloids of (SCHOFF and BOETTCHER), A., 744.
Lobeline, resuscitation with, in coal-gas poisoning (DOLLINOER), B., 698.
Lobster. See *Homarus vulgaris*.
Loganberries, constituents of juice of (DAWSON), B., 846.
Lubricants (MARSHALL), (P.), B., 42*; (DOKTER), (P.), B., 67; (COPHTHORNE and ILLINOIS GRAPHITE Co.), (P.), B., 526; (BECKER and STANDARD DEVELOPMENT Co.), (P.), B., 733.
 chemical constitution and synthesis of (SPILKER), B., 865.
 manufacture of (VAN GUNDY, DIMMING, and TEXAS Co.), (P.), B., 864.
 for hot bearings (VAN GUNDY; SCANLIN and TEXAS Co.), (P.), B., 1005.
 material containing sulphur for use in (GELSENKIRCHENER BERGWERKS-A.-G. and SCHÜTZ), (P.), B., 865.
 X-ray spectrographic investigations on (TRILLAT), B., 349.
 spreading of, on metallic and solid surfaces (WOOG), B., 37.
 measurement of efficiency of (v. DALLWITZ-WEGNER), B., 349.
 A values for (HARDY and NOTTAGE), B., 775.
Lubricating greases (RÜTGERSWERKE-A.-G. and TEICHMANN), (P.), B., 431; (HEITMANN), (P.), B., 478.
Lubricating oils (HANNA, CUSHMAN, DOELL, and STANDARD OIL Co.), (P.), B., 120; (WEIR and BLACK; FRANK), (P.), B., 147; (SWOBODA), B., 349; (WISNER), (P.), B., 941; (SCHELLER), (P.), B., 972.
 preparation of (RIAL), (P.), B., 701.
 production of, by distillation (SIMPLEX REFINING Co., KRAMER, and SENDEN), (P.), B., 1005.
 distillation of, from mineral oils (SIMPLEX REFINING Co. and KRAMER), (P.), B., 908.
 vacuum distillation of (V.L. OIL PROCESSES, LUCAS, and LOMAX), (P.), B., 623; (BROOKS), B., 811.
 treatment of (HALL and TEXAS Co.; BLACK and WEIR), (P.), B., 353; (ACHESON), (P.), B., 575.
 purification and reclaiming of (AKT. SEPARATOR and BOYD), (P.), B., 904.

Lubricating oils, refining of (WEIR; JURRISEN and SIMPLEX REFINING Co.), (P.), B., 701.
 without emulsification (JONES and SHARPLES SPECIALTY Co.), (P.), B., 397.
 viscosity and efficiency of (PARISH), B., 620.
 improvement of efficiency of, by graphite, and its relation to heat of wetting (BACHMANN and BRIEGER), B., 777.
 bromination of (MABERY), B., 970.
 Lubricating oils for electricity meters (HOLDE and SCHACHENMEIER), B., 261.
 motor carbon deposits from (LIVINGSTONE, MARLEY, and GRUSE), B., 571.
 acidified, neutralising action of activated decolorising earths on (ECKART), B., 181.
 castor machine (REBBER and UNION OIL Co. of CALIFORNIA; FRIZELL and UNION OIL Co. of CALIFORNIA), (P.), B., 575.
 centrifugally treated, prevention of aëration of (AKTIEBOLAOET SEPARATOR and HALL), (P.), B., 184*.
 equilibrium, for internal-combustion engines (WILSON and WILKIN), B., 571.
 highly viscous, production of (CONTINENTALE A.-G. F. CHEMIE), (P.), B., 414.
 for internal-combustion engines, purification of (SHARPLES SPECIALTY Co., SHARPLES, and JONES), (P.), B., 1006.
 mineral, refining of (WEIR), (P.), B., 780.
 used, purification of (BRITISH THOMSON-HOUSTON Co. and VAN BRUNT), (P.), B., 184, 814; (AKTIEBOLAOET SEPARATOR), (P.), B., 655; (AKTIEBOLAOET SEPARATOR and MILLER), (P.), B., 1004.
 valuation of (MOORE), B., 227.
 tests for oiliness of (A. H. & H. GILL), B., 620.
 apparatus for examination of, for adsorbed petrol (KIEMSTEDT), B., 970.
 Lubricating value, relation of, to physical and chemical properties of oils (PARSONS and TAYLOR), B., 620.
 Lubrication, factors affecting (GILSON), B., 615.
 from thermodynamic-molecular standpoint (v. DALLWITZ-WEGNER), B., 349.
 rôle of graphite in (KOETHEN), B., 567.
 data (SPARROW and EISINGER), B., 619.
 fluid film, surface action and (BECKER), B., 615.
 industrial, rôle of oiliness in (WILHARM), B., 619.
 Lucerne (*alfalfa*), nitrogenous constituents of (VICKERY), A., 99.
 physiological balance for, in solution cultures (LOMANITZ), B., 893.
 Luciferin, specificity of (HARVEY), A., 1059.
 Luciferinase, specificity of (HARVEY), A., 1059.
 Ludlamite, identity of lehrerite with (BERMAN), A., 709.
 Luetic, lipolytic activity and cholesterol content of blood-serum of (v. WEISS and DÖRLE), A., 753.
 Luminescence (ENGLE and HOPKINS), A., 224.
 after exposure to X-rays (MALLET), A., 885.
 activation of, by uranium (NICHOLS and SLATTERY), A., 659.
 of solids (EWLES), A., 455.
 of vapours, spectral photography of (SCHAUM and KRAEMER), A., 1020.
 of animal tissues (HARVEY), A., 1060.
 surface, calorimetric determination of (WÖHLER and RABINOVITSCH), A., 335.
 Luminol, distinction between veronal, propional, and (EKKERT), B., 802.
 Luminous masses (MINES), (P.), B., 248.
 Lungs, "lipodiæresis" in the (SCHMITZ and PEISER), A., 89.
 Lupeylene (VESTERBERG and NOUD), A., 619.
 Lupin, yellow. See *Lupinus*.
 Lupins, determination of alkaloids in (MACH), B., 214.
 determination of alkaloid content of seeds of (BRAHN and ANDRESEN), B., 1028.
 Lupin alkaloids. See under Alkaloids.
Lupinus albus, salt requirements of (ARNDT), B., 506.
Lupinus luteus, alkaloid content of (SABALITSCHKA and JUNGERMANN), A., 99, 208, 440.
 nitrogenous extractives from etiolated seedlings of (TOKAREWA), A., 1183.
 oil from (TREFF, RITTER, and WITTRISCH), B., 850.
 action of calcium and magnesium on (BURK), B., 250.
 Luteolin, ferric salt (ZETZSCHE and LOOSLI), A., 67.
 Lutidine, compound of tetrabromoethane and (FULTON), A., 305.

Lymph, properties and origin of (ABE), A., 195.
 effect of drugs on mineral metabolism of (PETERSEN and HUGHES), A., 205.
 proteins of (SABRY), A., 1167.
 Lysimeter, movable (DULEY), B., 207.
 Lysine, ϵ -benzoyl- α -*p*-toluenesulphonyl derivative (STEIB), A., 825.
d-Lysine, configuration of (KARRER, ESCHER, and WIDMER), A., 505.
d-Lysuric acid, esters (KARRER, ESCHER, and WIDMER), A., 505.

M.

Machines, centrifugal. See under Centrifugal.
 Maclurin, aluminium and iron salts (ZETZSCHE and LOOSLI), A., 67.
 Magma, syenitic, zonal growth of plagioclase and soda-orthoclase in (IRÖ), A., 934.
 Magnesite. See Magnesium oxide.
 Magnesite sand, molting of (FIEDLER), (P.), B., 275.
 Magnesium, manufacture of (COTTRINGER, HEATH, and DOW CHEMICAL Co.), (P.), B., 196; (BAKKEN and AMER. MAGNESIUM CORP.), (P.), B., 591, 832, 833; (BAKKEN, HARVEY, and AMER. MAGNESIUM CORP.), (P.), B., 833.
 from its chloride (ARNOLD and DOW CHEMICAL Co.), (P.), B., 675*.
 extraction or refining of (RHODIN), (P.), B., 134*.
 and its alloys, treatment of (DANIELS, ZIMMERMAN, and WATSON), (P.), B., 591*.
 casting of (MICHEL), (P.), B., 755.
 molting of, in an induction furnace (RHEINISCHER METALLWAREN- & MASCHINENFABR.), (P.), B., 246.
 spectrum of (PETERSEN and GREEN), A., 102.
 electrochemistry of (BODFORSS), A., 1212.
 isomorphism of mercury and (CAROBBI and MARCOLONGO), A., 782.
 protective coating for (KEELER and AMER. MAGNESIUM CORP.), (P.), B., 369.
 and its alloys, coating of an oxygen compound on (BACKER), (P.), B., 496*.
 reaction regions for mixtures of, with iron, sulphur, and silica (JORISSEN and ONGKIEHONG), A., 909.
 action of, on methylene iodide (EMSWILLER), A., 1224.
 action of calcium and, on seedlings of yellow lupin (BURK), B., 250.
 precipitation of, from sea water (IRVING), A., 1021.
 colloidal, as injection for hæmorrhoids (KATO), (P.), B., 219*.
 Magnesium alloys, production of (I. G. FARBENIND. and SCHMIDT), (P.), B., 711*.
 heat treatment of (JEFFRIES, AROHER, and AMER. MAGNESIUM CORP.), (P.), B., 792.
 for hot forging (I. G. FARBENIND.), (P.), B., 885.
 very light, physical properties of (PORTEVIN and LE CHATELIER), B., 280.
 with aluminium (HALSTEAD and SMITH), A., 565; (BAKKEN and AMER. MAGNESIUM CORP.), (P.), B., 590.
 electrolysis of (KREMANN and DELLAHER), A., 802.
 effect of silicon in (ASSMANN), B., 831.
 with aluminium and cadmium (VALENTIN), B., 634.
 with aluminium and silicon, sand-cast (DANIELS), B., 494.
 with cadmium, potential of (VINOGROROV and PETRENKO), A., 360.
 with cadmium and copper (ROSTHORN), (P.), B., 635.
 with copper (COOK and JONES), B., 830.
 with tin (HUME-ROTHERY), A., 356.
 Magnesium salts, antagonism of calcium salts and (HIRSCHFELDER and SERLES), A., 1274.
 excretion of, in urine (GREENWALD and GROSS), A., 206.
 Magnesium arsenide, action of, on ethyl alcohol (NATTA), A., 1023.
 bromohydrosulphide, and its additive compound with quinoline (MINGOIA), A., 388.
 carbonate, production of, with recovery of ammonium salts (WÄESER), (P.), B., 915.
 thermal dissociation of (BÄCKSTRÖM), A., 798.
 and alkaline-earth carbonates, colloidal, reciprocal protective effect of (STELLA), A., 1204.
 basic carbonate, light, manufacture of (CROWELL and WESTERN INDUSTRIES Co.), (P.), B., 321.
 heavy or light, manufacture of (GRUNWALD), (P.), B., 486.

- Magnesium carbonates, basic** (LEVI), B., 190.
 chloride, anhydrous, manufacture of (COTTRINGER, CULLINGS, and DOW CHEMICAL Co.), (P.), B., 191; (DOW CHEMICAL Co.), (P.), B., 488*; (I. G. FARBERIND.), (P.), B., 979.
 production of, in flakes (COLLINGS and DOW CHEMICAL Co.), (P.), B., 822.
 crystal structure of (BRUNI and FERRARI), A., 995.
 and of its mixtures with lithium chloride (BRUNI and FERRARI), A., 236.
 deliquescence of (SWAN), B., 978.
 equilibrium of barium and potassium chlorides with (VALENTIN), B., 634.
 decomposition of, by steam (KERSTEN), (P.), B., 789.
 viscosity changes in reaction between magnesia and solutions of (MAEDA), B., 587.
 effect of, on germination of seeds (MEYER), B., 410.
 and sulphate, equilibrium of, with sodium chloride and sulphate and water (ROSE), A., 26.
hydrogen chloride (PICKENS), A., 255.
fluoride, and its double salt with potassium fluoride, crystal structure of (VAN ARKEL), A., 460.
hydride, band spectrum of (WATSON and RUDNICK), A., 657, 1079.
 vibrational quantum numbers in the spectrum of (WATSON), A., 555.
hydroxide, manufacture of (A./S. DE NORSKE SALTVERKER), (P.), B., 322; (MONTERUMICI), (P.), B., 666.
infra-red absorption spectra of (PLYLER), A., 990.
oxide (*magnesia*; *magnesite*), manufacture of, from magnesium chloride (FRANK), (P.), B., 320.
 from dolomite (HENTON), B., 435; (KIEFENHEUER), B., 874.
 from crystalline magnesites for production of Sorel cement (AUSTRAL-AMER. MAGNESITE Co.), (P.), B., 364.
 preparation of, in form of cream of magnesia (HURRELL), (P.), B., 1013.
 viscosity changes in reaction between aqueous magnesium chloride and (MAEDA), B., 587.
 burning of (STEHMANN), (P.), B., 489*.
 electrically heated kilns for burning (SIEMENS & HALSKE, GROSS, and STADLEUBER), (P.), B., 331.
 burnt, production and properties of (STETTBAOHER), B., 977.
 analysis of, after storage (STETTBAOHER), B., 948.
 precipitated, adsorption of iodine by (HAMY), A., 899.
 manual experiments with (MACINTYRE), B., 640.
 fused, articles of (BROWN), B., 127.
 preparation of porous bodies of (DEUTSCHE TON- & STEINZENG-WERKE), (P.), B., 55.
 bricks, electrical conductivity of, at high temperatures (BURT-GERRANS and KERR), B., 64.
 compositions, plastic (FROSELL and WILLIAMSPORT BUILDING PRODS. Co.), (P.), B., 241*.
oxychloride cement mixtures (GRANITITE MANUF. Co. and THOMPSON), (P.), B., 14.
ammonium phosphate, solubility and grain size of (BALAREV), A., 344.
pyrophosphate, luminescence of (WÖHLER), A., 335.
plumbide, crystal structure of (FRIAU), A., 889.
selenocyanates, ammonia compounds of (BERGSTROM), A., 1114.
silicate, colloidal. See "Asahi promoloid."
 spent-hydrated, revivification of (CHAPPELL and STANDARD OIL Co.), B., (P.), 120.
silicide (WÖHLER and SCHLIEPHAKE), A., 368.
sulphate, solubility of (MACHELEIDT), A., 467.
 decomposition of (ZAWADZI, KONARZEVSKI, LICHTENSTEIN, SZMANKIEWICZ, and WACHSZEJŃSKI), A., 923.
 action of silica on (MARCHAL), B., 51.
hydrogen sulphite liquors, wetting of spruce wood with (SCHWALBE and BERNDT), B., 531.
- Magnesium organic compounds, structure of** (TERENTJEV), A., 1130.
 action of nitriles on (MATHUS), A., 54.
 action of, on *N*-dialkylamides (MAXIM), A., 837.
 action of, on aliphatic dialkylamides (MONTAGNE), A., 942.
 action of, on glycidic esters (BARDON and RAMART), A., 950.
 action of, on nitriles (BRUYLANTS), A., 826; (GUERDEN), A., 1025; (DE COSTER), A., 1027; (VELGHE), A., 1044.
 reactions of organic peroxides with (GILMAN and ADAMS), A., 62.
 preparation of phenols from (IVANOV), A., 395.
 with di-iodobenzenes (BRUHAT and THOMAS), A., 1028.
 Grignard's, constitution of (MEISENHEIMER), A., 68.
 luminescence of (EVANS and DIEPENHORST), A., 506.
- Magnesium organic compounds:—**
Magnesium alkyl oxides, and their use in synthesis (TERENTIEV), A., 268; (TERENTIEV, GRIBKOV, and TITOV), A., 382.
benzhydryl chloride (GILMAN and KIRBY), A., 944.
butyl bromide, action of, with aromatic thiocarbimides (WORRALL), A., 161.
cumyl chloride, syntheses with (BERT), A., 285.
ethyl bromide, action of, on the methyl ester of camphoric acid α -nitrile (SALMON-LEGAGNEUR), A., 951.
guanidine chromate (CANNERY), A., 55.
halides, action of, with aryl borates, carbonates, phosphates, and silicates (GILMAN and VERNON), A., 718.
 aryl halides, oxidation of (GILMAN and WOOD), A., 507.
hexamethylenetetramine molybdate (DI CAPUA), A., 304.
indolyl iodide, preparation of indole derivatives from (PUTOCHIN), A., 1151.
methyl iodide, action of, on benzyl halides (FUSON), A., 1237.
organic halides, action of, on esters of sulphur acids (GILMAN, ROBINSON, and BEABER), A., 1239.
 reaction between thionylaniline and (GILMAN and MORRIS), A., 1132.
p-isopropylphenyl bromide, syntheses with (BERT), A., 56.
pyrryl bromide, action of ethyl oxalate on (GODNEV and NARYSCHKIN), A., 183.
 See also Grignard reagents.
- Magnesium determination and separation:—**
 commercial analysis of (GUÉRIN), B., 326; (BONNARD and DANDURAND), B., 710.
 determination of, microchemically, in organic liquids (CONDRELLI), A., 39.
 determination of, nephelometrically (KRIS), A., 100.
 separation of aluminium and (LASSIEUR), A., 376.
 separation of calcium and, as oxalates (FISCHER, STEIKMAN, and DOMBROWSKI), A., 703.
 separation of small quantities of calcium from large amounts of (NOLL), B., 221.
- Magnesium anodes**. See under Anodes.
- Magnesiummethylketole**, condensation of, with anthraquinone (MINGOIA), A., 1158.
- Magnesiopyrrole**, condensation of, with anthraquinone (MINGOIA), A., 1158.
- Magnesiopyrroles**, syntheses with (ODDO; ODDO and PEROTTI), A., 1157.
- Magnet**, atomic, structure of the (FORRER), A., 670, 878, 1075.
- Magnets**, heat treatment and testing of chromium steel for (SCHULZ and JENGE), B., 442.
 permanent (STÄBLEIN), B., 57.
 heat treatment of high-speed steel for (GLOCKENSTAHLWERKE LINDENBERG), (P.), B., 61.
- Magnetic moments**, determination of, by deflexion of α -particles (WESSEL), A., 220.
 rotation of the plane of polarisation (LADENBURG), A., 110.
 structures, manufacture of (WESTERN ELECTRIC Co.), (P.), B., 61.
 susceptibility, equilibrium diagram and, in binary alloys (ENDO), B., 327.
 of gases (LEHRER), A., 784, 1086; (HAMMAR), A., 1197.
 of binary mixed liquids (TRIFONOV), A., 234.
- Magnetisation**, measurement of coefficients of (FOËX and FORRER), A., 932.
- Magnetism in relation to atomic structure** (CABRERA), A., 7.
 of hydroxides (VEIL), A., 998.
 of complex salts in relation to valency (BOSE), A., 111.
- Magneto-electric orientation** (HURER), A., 1189.
- Magneton**, recent values of (KUNZ), A., 1075.
- Magneton numbers** in complex compounds of paramagnetic elements (BOSE), A., 114.
- Magneton theory** (GERLACH), A., 114.
- Maia squinado**, buffering power of blood of (KERRIDGE), A., 1267.
- Maize**, composition and maturity of (HOPPER), B., 930.
 rational milling of (MAROTTA and DI STEFANO), B., 26.
 production of high-grade flour from (HÄUSLER), (P.), B., 297.
 proteins of (ARBUCKLE and THIES), A., 439.
 effect of addition of sodium chloride on value of diet of (MITCHELL and CARMAN), A., 754.
 nitrogen metabolism in etiolated seedlings of (JODIDI), A., 761.
- Maize cobs**, destructive distillation of (ATKINSON and GARLAND), (P.), B., 396.
- Maize kernels**, nutritive value of layers of (KLEIN, HARROW, PINE, and FUNK), A., 762.

- Maize kernels, influence of irrigation water and manure on composition of (GREAVES and NELSON), B., 102.
- Maize seedlings, age of, in relation to resistance to sodium chloride (HARRISON and KING), B., 292.
- Maize starch, products of hydrolysis of (BERLIN), B., 992.
- Male fern. See *Aspidium filix mas*.
- Maleanilic acid *o*-disulphide (BOOERT and STULL), A., 310.
- Maleic acid, velocity of addition of sulphites to (VAN DER ZANDEN), A., 691.
- effect of colloidal sulphur on conversion of, into fumaric acid (FREUNDLICH and SCHIKORR), A., 481.
- thallous salt (CHRISTIE and MENZIES), A., 56.
- Maleic acid, amino-, propionyl derivative, salts and derivatives of (BERGMANN, KANN, and MIEKELEY), A., 1235.
- Malic acid, influence of boric acid on rotation of (DARMOIS), A., 337.
- ethyl ester, mutarotation of mixtures of molybdates and (DARMOIS), A., 457.
- detection of, in fruits (MUTTELET), B., 564.
- L*-Malic acid, ethyl ester, acyl derivatives of (FREUDENBERG and NOË), A., 54.
- Malonic acid, complex ferric salts of (WEINLAND and LOEBICH), A., 499.
- alkyl hydrogen esters (CONTZEN-CROWET), A., 938.
- beryllium salt, conductivity of (SIDGWICK and LEWIS), A., 1211.
- esters, condensation of acetoacetic esters (GAULT and KLEES), A., 938.
- β -dinaphthyl ester (GIUA), A., 60.
- ethyl ester, action of benzenesulphonazide on (CURTIUS and JEREMIAS), A., 415.
- sodium derivative, action of ethyl citraconate or itaconate on (INGOLD and SHOPPEE), A., 1039.
- sodium alkyl esters, action of, on duroquinone (SMITH and DOBROVOLNY), A., 836.
- derivatives of (KON and SPEIGHT), A., 1246.
- Malonic acid, chlorobromo-, brucine salts of (READ and McMATH), A., 1024.
- nitroso-, ferro-salt (KÜSTER, ERFLE, v. ROLL, and SCHILLER), A., 821.
- Malonic acids, cyclic and open-chain esters, hydrolysis of (GANT and INGOLD), A., 249.
- Malonyldiaminophenylarsonic oxide (LEWIS and BENT), A., 628.
- Malonyldibenzylidurethane (BASTERFIELD, WOODS, and WRIGHT), A., 1132.
- Malonyldiphenylidurethane (BASTERFIELD, WOODS, and WRIGHT), A., 1132.
- Malt, optimal hydrogen-ion concentration for amylolytic action of (LÜERS and NISHIMURA), B., 962.
- relation of quality of barley to that of (LANCASTER), B., 103.
- modification of, in relation to stability of beer (MORITZ and FULLER), B., 602.
- evaluation of, for distillery purposes (HASTIE), B., 844.
- kilns for (REISSHAUER), (P.), B., 1026.
- barley, separation of enzymes of (PRINGSHEIM, GENIN, and PEREWOSKY), B., 104.
- extract, determination of diastase in (SEELIGMANN), B., 25.
- preparations containing vitamins (SOC. CHEM. IND. IN BASLE), (P.), B., 297.
- determination of colour of (BERMANN), B., 170, 929.
- determination of diastatic power of (HIND, THREADGOLD, and ARNOLD), B., 170.
- Maltase (WILLSTÄTTER and BAMANN), A., 433, 544.
- from barley malt (PRINGSHEIM and LEIBOWITZ), A., 202; (LEIBOWITZ), A., 322.
- Maltose, constitution of (IRVINE and BLACK; COOPER, HAWORTH, and PEAT), A., 602.
- production of, from starchy materials (GORE and FLEISCHMANN Co.), (P.), B., 458.
- fermentation of, by yeast rich in maltase (WILLSTÄTTER and BAMANN), A., 544.
- hydrolysis of (COLIN), A., 1229.
- products of oxidation of, with Fehling's solution (HERZFELD), B., 560.
- isoMaltose (ISAJEV), A., 714; (GEORG and PICTET), A., 823; (PRINGSHEIM, BONDE, and LEIBOWITZ), A., 1127.
- synthesis of, and its derivatives (PICTET and GEORG), A., 152.
- identity of gentiobiose with (BERLIN), A., 602.
- acetyl derivative (GEORG and PICTET), A., 602.
- Mammary glands, secretion of (HARTWELL), A., 207.
- human, enzymes of (TATEYAMA), A., 93.
- Mandelic acid, conversion of phenylglyoxal into, by ketone-aldehyde mutase (BINDER-KOTRBA), A., 1059.
- additive compound of benzene and (ZAHN), A., 65.
- Mandelic acid, *m*-amino-, asymmetric dyes from (BRODE and ADAMS), A., 1032.
- Mandelic acid (KISHNER), A., 167.
- Mandelic acids, optically active, configuration of (CLOUGH), A., 111.
- Manganese, structure of (COLLINS), A., 7.
- extraction of, from ochres, earths, and colours (SOUVIRON), (P.), B., 889.
- and its alloys, production of, from ores (HEULAND), (P.), B., 673.
- treatment of ores containing silver and (COOLBAUGH, READ, and COMPLEX ORES RECOVERIES Co.), (P.), B., 97.
- equilibrium of carbon, phosphorus, and, in basic open-hearth process (HERTZ), B., 490.
- absorption spectrum of (ZUMSTEIN), A., 107.
- are spectrum of (SAWYER), A., 214; (McLENNAN and McLAY), A., 766.
- Röntgen-ray spectrum of (SELJAKOV and KRASNIKOV), A., 446; (ORTNER), A., 650.
- potential of, and its replacing power (ROYCE and KAHLENBERG), A., 1104.
- removal of, from amalgams (RUSSELL, EVANS, and ROWELL), A., 911.
- reaction of ferrous sulphide with (HERTY and TRUE), A., 488.
- chlorosis of pineapples due to (JOHNSON), B., 105.
- in Amsterdam dune water supply (VOLZOGEN-KÜHR), B., 724.
- Manganese alloys with aluminium, sand-cast (DANIELS), B., 280.
- Manganese compounds with nitric oxide (MANCHOT and SCHMID), A., 1219.
- action of, on alcoholic fermentation (ROSENBLATT and MARCH), A., 641.
- poisoning by. See under Poisoning.
- Manganese salts, formation of permanganate in electrolysis of (CAMPBELL), A., 366.
- influence of, on growth of sugar cane (McGEORGE), B., 169.
- action of, on plants (McHARGUE), A., 438.
- in diet, effect of, on growth (McHARGUE), A., 972.
- effect of, on nutrition (RICHEL, GARDNER, and GOODBODY), A., 197.
- Manganese arsenates, manufacture of (TANNER and GRASSELLI CHEMICAL Co.), (P.), B., 743.
- borates (MAZZETTI and DE CARLI), A., 809.
- fluoride, crystal structure of (VAN ARKEL), A., 781.
- hydroxides, action of neutral salts on (GHOSH), A., 1203.
- oxide, crystal structure of (FONTANA), A., 995.
- equilibria of aluminium oxide, silica, and, in furnace slags (GLASER), B., 753.
- dioxide, crystal structure of (FERRARI), A., 664.
- adsorption by (LIEPATOV), A., 789.
- adsorption of carbon oxides and oxygen by, and its mixtures with cupric oxide (HOSKINS and BRAY), A., 807.
- colloidal, preparation of (STOEPOE), A., 676, 792.
- hydrated, adsorption by (LIEPATOV), A., 571.
- adsorption of barium chloride by (CHLOPIN and BALANDIN), A., 119.
- mixtures of cupric oxide and, as catalysts (BRAY and DOSS), A., 917.
- electrodes. See under Electrodes.
- silicate and sulphide, equilibria between, in furnace slags (GLASER), B., 753.
- sulphate, manufacture of (MILBAUER), B., 787.
- equilibrium of potassium sulphate, water, and (CAVEN and JOHNSTON), A., 1210.
- vanadate (EPHRAIM and BECK), A., 371.
- Manganous salts, oxidation of, to permanganic acid (TRAVERS), A., 581.
- Manganous chloride, crystal structure of (BRUNT and FERRARI), A., 995.
- fluoride, crystal structure of (FERRARI), A., 664.
- hydroxide, autoxidation of (MEYER and GULBINS), A., 925.
- sodium pyrophosphate (ROSENHEIM, FROMMER, GLÄSER, and HÄNDLER), A., 696.
- Permanganic acid, oxidation of manganous salts to (TRAVERS), A., 581.
- catalysis of the reaction of arsenious acid with (LANG), A., 581.
- Permanganates, absorption spectra of (ADINOLFI), A., 659.
- oxidation of manganous salts to (CAMPBELL), A., 366.
- velocity of reaction of chloral hydrate with (BUZAGH), A., 1010.

Manganese:—

- Permanganates**, titration of arsenious acid with (CANTONI), B., 663.
 standardisation of solutions of (ALSTERBERG), A., 374.
- Manganese organic compounds:—**
 Manganese molybdates with organic bases (DI CAPUA), A., 304.
- Manganese detection, determination, and separation:—**
 detection of (LOXINESCU and PETRESCU), A., 263.
 determination of (STREIBINGER and POLLAK), A., 492.
 determination of, by the bismuthato method (PARK), A., 704.
 determination of, by oxidation (TRAVERS), A., 704, 1019.
 determination of, with permanganate (REINITZER and CONRATH), A., 705.
 determination of large quantities of, in technical iron alloys, volumetrically (HEOZKO), B., 791.
 separation of zinc and (RUFF and HIRSCH), A., 126.
- Manganese steel.** See Steel, manganese, under Iron.
- Manganoxallic acid**, potassium salt, decomposition of, in polarised and ordinary light (GHOSH and KAPPANNA), A., 1024.
- Mangold**, proteins of roots and seeds of (DAVIES), A., 761.
- Mannitol**, preparation of, by means of bacteria (MEZZADROLI), B., 210.
 heat capacity, entropy, and energy of (PARKS and ANDERSON), A., 784.
- d-Mannitol**, oxidation of (EVANS and HOLL), A., 149.
- l-Mannohepturonolactone p-bromophonylhydrazono** (KILIANI), A., 52.
- β-Mannolactone**, structure of (HAWORTH and NICHOLSON), A., 1025.
- l-Mannosaccharodilactone semicarbazide** (KILIANI), A., 52.
- Mannose**, and its derivatives, ring structure of (HUDSON), A., 714.
 diisopropylidene ether, constitution of (OHLE and BEREND), A., 150.
 methylation of (IRVINE and SKINNER), A., 714.
- d-Mannose**, oxidation of (EVANS, BUEHLER, LOOKER, CRAWFORD, and HOLL), A., 148.
- Manometer**, simple, for low pressures (SHIRAI), A., 933.
- Manuka.** See *Leptospermum scoparium*.
- Manures**, production of, from vegetable cellulose (FÄKALTORF-STUDIENGES and BAUMGARTEN-CRUSIUS), (P.), B., 991.
 fermented preparations of (WEIGERT), B., 457.
 farmyard, so-called hot fermentation of (LEMMERMANN), B., 457.
 action of, alone and in combination with mineral fertilisers (KLOBERGER), B., 684.
 decomposition of, in soils, and their utilisation by plants (BACH), B., 640.
 green, availability of nitrogen in (LÖHNIS), B., 990.
 humus or carbon dioxide, action of (LEMMERMANN), B., 378.
 liquid, preservation of organic nitrogen compounds in (KUCHLER and BODLER), (P.), B., 417.
 Surophosphato or Dasag (BLANCK and ALTEN), B., 379.
 See also Fertilisers.
- Manurial experiments** (MÜNTER), B., 959.
 with acid soils (MÖLLER-ARNOLD), B., 959.
 treatment, residual effects of forty years (WHITE and HOLBEN), B., 800.
- Manuring of meadows** (RAUM), B., 601.
- Margarine**, manufacture of (SCHOU), (P.), B., 297*.
 determination of coconut oil in (BERTRAM, VAN DER STEUR, and VERHAGEN), (P.), B., 140.
 determination of palm-kernel oil and butter fat in (ELSDON and SMITH), B., 295.
- Marine animal oils.** See Oils, animal marine.
- Marine products**, can corrosion and blackening in (DILL and CLARK), B., 638.
- Martensite** (HANEMANN and SCHRADER), B., 880.
 nature of (RUER), A., 786.
- α- and β-Martensites**, determination of heat of precipitation of cementite from (KAWAKAMI), B., 325.
- Martin's broth**, diphtheria toxin in (SCHMIDT), A., 97.
- Mass**, change of (v. GLEICH), A., 555.
- Mass action**, new law of (LORENZ), A., 126; B., 244; (LORENZ and VAN LAAR), A., 355; (LORENZ and MANNHEIMER), A., 355, 680.
- Massoi.** See *Cinnamomum massoi*.
- Mastic membranes.** See under Membranes.
 sols, critical concentration of electrolytes for coagulation of (TSUJI), A., 795.
 suspensoids, precipitation of (TARTAR and DRAVES), A., 794.
- Masurium**, separation of rhenium and (TACKE), A., 112.
- Materials**, artificial, coating and sizing of (LILIENTHAL), (P.), B., 783.
- Mattes**, rôle of sodium sulphate in refining of (BOGITCH), B., 547*.
 copper-nickel, refining of (HYBNETTE and ANGLO-CANADIAN MINING & REFINING CO.), (P.), B., 547.
- Matte surface**, production of, on articles containing a heavy hydrocarbon compound (BRITISH THOMSON HOUSTON CO. and WHITNEY), (P.), B., 748.
- Matter**, theory of (SCHUSTER), A., 342, 565, 670.
 effect of ultra-violet light and X-rays on stability of (FOLEY), A., 109.
 intra-atomic condensation of (PLOTNIKOV), A., 881.
 models showing electrical structure of (THORNTON), A., 221.
- Mayweed.** See Chamomile.
- Meadows**, manuring of (RAUM), B., 601.
- Meat**, refrigeration of (COOK, LOVE, VICKERY, and YOUNG), B., 604; (VICKERY), B., 765.
 iron content of various kinds of (FORBES and SWIFT), A., 538.
 nutrition value of, for nitrogen equilibrium (ROSE and MACLEOD), A., 423.
 use of sodium nitrite in curing (LEWIS, VOSE, and LOWRY), B., 104.
 food preparations made from (THOMSON and PICKETT), (P.), B., 689.
 Feder number of various kinds of (DE KRUIJFF and VOERMAN), B., 643.
 canned (WRIGHT and BEVIS), B., 643.
 detection of incipient putrefaction in (HERZNER and MANN), B., 1027.
- Meat extracts**, action of ammonium bases in, on intestinal secretion (KOMAROV), A., 430.
 determination of moisture in (DEDLow and SMITH), B., 846.
- m-Meconineacetic acid**, and its derivatives (EDWARDS), A., 735.
- Medang losoh.** See *Cinnamomum parthenoxylum*.
- Medicaments**, insoluble or difficultly soluble in water, preparation of solutions of (SOC. CHEM. IND. IN BASLE), (P.), B., 341.
- Medicinals**, fifty years of (LEECH), B., 850.
 synthetic, evolution of (ARNY), B., 850.
- "Medinal"**, mercury compounds of, and its detection (RUPP and MÜLLER), A., 862.
- Melaleuca linariifolia and alternifolia**, essential oils of (PENFOLD), B., 804.
- Melanargia galatea**, pigment from wings of (THOMSON), A., 424, 1168.
- Melanins** (BLOCH and SCHAAF), A., 87; (BRAHN), A., 318.
 pyrolytic theory of synthesis of (RONDONI), A., 538.
- Melanodermitis**, amino-acids in blood in (LOEPER, OLLIVIER, and LESURE), A., 1054.
- Melanogen** (SACCARDI), A., 196.
- Meldola blue**, preparation of (COBENZL), B., 656.
 isomeride of, and its salts (KEHRMANN, GRILLET, and BORGEAUD), A., 1262.
- Melezitose**, structure of (KUHN and v. GRUNDHERR), A., 1127; (ZEMPLÉN and BRAUN), A., 1229.
- Melibiose**, synthesis of (PIOTET and VOGEL), A., 1229.
- Melilotoside** (CHARAUX), A., 99.
- Melilotus altissima and arvensis**, glucoside from (CHARAUX), A., 99.
- Mellon**, decomposition of, into ammonia and carbon dioxide (GLUUD, KELLER, and KLEMPT), B., 1011.
- Melting**, lattice dynamics of (BRAUNBEK), A., 999.
- Melting point**, micro-determination of (VORLÄNDER and HABERLAND), A., 142.
 and chemical constitution, relation between (VAN DER KAM), A., 1240.
 and elasticity (ANDREWS), A., 462.
 of saturated dibasic acids (FAIRWEATHER), A., 668.
 of binary systems (RHEINBOLDT and KIRCHHEISEN), A., 1001.
 of compounds, additivity of (CARLSOHN), A., 1087.
- Melting point apparatus** (SEETER), A., 378; (HOSKING and SHORT; MACMULLIN), A., 593.
- MacMullin's improved** (PALMER and WALLACE), A., 1021.
- Membranes**, electrical properties and permeability of (FUJITA), A., 120, 574; (MICHAELIS and DOKAN), A., 120; (MICHAELIS and FUJITA), A., 120, 349; (MICHAELIS and HAYASHI), A., 901.
 permeability of (SEN), A., 349.
 reversible permeability of (GURCHOT), A., 240.
 colloid, permeability of (MICHAELIS and FUJITA), A., 120, 349; (COLLANDER), A., 791.
 for non-electrolytes (FUJITA), A., 574.

- Membranes, collodion, standardisation of (LUNDGAARD and HOLBOLL), A., 932.
 coated with protein, permeability of (HITCHCOCK), A., 1100.
 dried, electrical properties and permeability of (MICHAELIS and HAYASHI), A., 901.
 mastic, paraffin wax and rubber, permeability of (MICHAELIS and DOKAN), A., 120.
 nickel, for ultrafiltration (MANNING), A., 706.
 nitrocellulose, for dialysis and evaporation (LOONEY and KOBER), (P.), B., 392.
 parchment paper, for osmosis (SIEMENS & HALSKE), (P.), B., 114.
 semi-permeable, equilibria in systems with (SCHREINEMAKERS), A., 578, 1102, 1210.
- Men, effect of lack of inorganic salts on (THIELMANN), A., 1171.
 blood of. See under Blood.
- Menformon (LAQUEUR, HART, DE JONGH, and WIJSENBEER), A., 546.
- Menhaden, See *Brevoortia tyrannus*.
- Menotoxin (KLAUS), A., 195.
- Mentha (JENISON and KREMERS), B., 803.
- Mentha crissa*, *piperita*, and *pulegium*, essential oils of, from Sukhum, Caucasias (KRASTELEVSKI), B., 340.
- Mentha pulegium*, essential oil of (ROMEO and GIUFFRÈ), B., 107; (LIOTTA), B., 691.
- Menthane-1:2-diol (MEERWEIN, OGAT, PRANG, and SERINI), A., 722.
- Menthol, action of phosphorus chloride on (MILOBEDZKI and KOLITOWSKA), A., 730.
 naphthylurethane from (BIOKEL and FRENCH), A., 517.
 determination of, in alcoholic solutions (DONATI and SEBOR), B., 75.
 determination of, in peppermint oil (FIGDOR), (P.), B., 383.
- Menthols, stereoisomeric, and their derivatives (BEDOS), A., 729.
- d-neo*Menthol, derivatives of (ZEITSCHEL and SCHMIDT), A., 1251.
- Menthol series, stereoisomerism in (ZEITSCHEL and SCHMIDT), A., 1250.
- α -Menthylcarboxylic acid, and its anilide (PASSERINI), A., 175.
- Menthone, derivatives of (RUPE and GUBLER), A., 841.
- Menthone, *pernitroso*-, action of phenylcarbylamine on (PAS-SERINI), A., 175.
- Menthones, optically active (READ and ROBERTSON), A., 1147.
dl-n- and *-iso*-Menthones, derivatives of (READ and COOK), A., 174.
- Menthone series (READ and COOK), A., 174; (READ and ROBERTSON; READ, COOK, and SHANNON), A., 1147.
- dl*- and *l*-*iso*-Menthonoximes, and their derivatives (READ and ROBERTSON), A., 1147; (READ, COOK, and SHANNON), A., 1148.
- sec-d*-Menthyl chloride (MILOBEDZKI and KOLITOWSKA), A., 730.
- Menthylamine phenylcarbamido (BEDOS), A., 730.
- Menthylamines, and their derivatives (READ and ROBERTSON; READ, COOK, and SHANNON), A., 1147.
- Menthylcarbinol, and its derivatives (RUPE and GUBLER), A., 841.
- Mercaptans, oxidation of (LEVENE and MIKESKA), A., 46, 1225.
- 2-Mercaptoanthracene-3-carboxylic acid (SOC. CHEM. IND. IN BASLE), (P.), B., 942.
- Mercapturic acid, formation of, in dogs (COOMBS and HELE), A., 862.
- Mercurisation (CHEM. FABR. MILCH and LINDNER), (P.), B., 873.
 theory of (LIEPATOV), A., 573.
 test for (MENNELL; KINKEAD), B., 535.
 of cotton, effects of oxidation before and after (KNECHT and MULLER), B., 269.
 of fabrics, machines for (GRUSCHWITZ), (P.), B., 403.
 of skeins, machines for (BONNET), (P.), B., 125*.
 of textiles (VOEGELI), (P.), B., 437.
 of yarn, means for facilitating (CALDWELL and BRITISH COTTON and WOOL DYERS' ASSOC.), (P.), B., 437*.
- Mercuration, mechanism of (MASCHMANN), A., 1265.
- Mercurialis* (HAAS and HILL), A., 99.
 properties of hermidin from (HAAS and HILL), A., 1066.
- Mercurialis perennis*, electrode potentials of hermidin from (CANNAN), A., 1183.
- Mercury, micro-structure of (ROSENHAIN and MURPHY), A., 996.
 metallurgy of (DUSCHAK and SCHUETTE), B., 61.
 smelting ores of antimony, arsenic, and (OESTERR. BAMAG-BÜTTNER-WERKE and JAHN), (P.), B., 549.
 purification of, by distillation (SIEMENS and HALSKE), (P.), B., 711.
 vacuum distillation apparatus for (HACKSPILL and SIGOT; ANSCHÜTZ), A., 1118.
- Mercury, vacuum arc still for (WARAN), A., 932.
 spectrum of (SKINNER; SNOEK), A., 329; (FUKUDA), A., 651; (TATE; TURNER and COMPTON), A., 1071.
 with an electrodeless discharge (ROBERTSON), A., 550.
 green line in (MCLENNAN and IRETON), A., 2.
 forbidden line in (TAKAMINE), A., 767.
 Zeeman effect in (RUARK), A., 652.
 infra-red arc spectrum of (MCLENNAN, SMITH, and PETERS), A., 107.
 band spectra of (NAGAOKA), A., 108.
 continuous spectrum of vapour of (RAYLEIGH), A., 875.
I-emission spectrum of (EDDY and TURNER), A., 652.
 line spectra of isotopes of (JENKINS), A., 771.
 action of an electric field on the optically excited spectrum of (TERENIN), A., 767.
 atomic refraction and dispersion of, in its dialkyls (KRAUSE), A., 718.
 vapour, ionisation of, by light (GIDDINGS and ROUSE), A., 876.
 selective dispersion of (KLINGAMAN), A., 1186.
 optical constants of (O'BRIEN), A., 230.
 vapour, fluorescence of (NIEWODNICZANSKI), A., 454.
 fluorescence of mixtures of sodium and (RASETTI), A., 776.
 polarisation of resonance fluorescence of (HANLE), A., 224.
 quenching of the resonance fluorescence of, by addition of gases (CARIO and FRANCK), A., 776.
 resonance radiation of, in its vapour (ORTHMANN and PRINGSHEIM; GOOS and MEYER; DITCHBURN), A., 334.
 effect of magnetic field on (BREIT and ELLETT), A., 1187.
 damping of resonance lines of, by collision (ORTHMANN), A., 224.
 passage of canal rays through (RUPP), A., 450.
 photo-electric threshold for (KAZDA), A., 3.
 effect of impurities on the photo-electric wave-length limit of (DUNN), A., 1073.
 vapour, photosensitisation of reactions by (MARSHALL), A., 919.
 and its alloys, effect of a magnetic field on the electrical resistance of (P. and T. J. JONES), A., 783.
 critical potentials of (LOYARTE), A., 1073.
 electrode potential and electrocapillary behaviour of (USHER), A., 803.
 magnetic disturbance of the superconductivity of (DE HAAS, Sizoo, and ONNES), A., 667.
 mean free path of electrons in vapour of (MAXWELL), A., 989.
 bombardment of, with electrons (MOORE), A., 105.
 vapour, doubly-ionised atoms in (CHILD), A., 1074.
 ionised, scattering of electrons by (DITMER), A., 1074.
 electrical double layer at surface of (BÜHL), A., 770.
 charge on evaporating particles of (SANZENBACHER), A., 1191.
 formation of negative ions in vapour of (NIELSEN), A., 769.
 atoms, excited, collisions of the second kind with (WINANS), A., 766.
 metastable (LORIA), A., 3.
 dissociation of hydrogen molecules by (MEYER), A., 777.
 dissociation of hydrogen and nitrogen by (COMPTON and DUFFENDACK), A., 3.
 electrocapillary curves of (LIEBREICH), A., 478.
 interior thermal conductivity of (ISTRATI), A., 462.
 critical temperature of (SAYCE and BRISCOE), A., 568.
 vapour pressure of (POINDEXTER), A., 117.
 vapour tension of (JENKINS), A., 233.
 surface tension of (SAUERWALD and DRATH), A., 790.
 adsorption of ions by (PATRICK and BACHMAN), A., 239; (ROSENBERG and STEGEMAN), A., 1201.
 vapour, adsorption of, by activated wood charcoal (ZELINSKI and RAKUZIN), A., 1090.
 diffusion of metals through (KREMAN and HRASOVEC), A., 477.
 spreading of water and aqueous salt solutions on (BURDON), A., 348.
 isomorphism of magnesium and (CAROBBI and MARCOLONGO), A., 782.
 hydrosols, colours of (FEICK), A., 22; (GUTBIER), A., 241.
 use of, as catalyst, in sulphonation of anthraquinone (MEYER), A., 1146.
 formation of gold, from (RIESENFELD and HAASE), A., 264, 922; (MIETHE and STAMMBREICH), A., 367, 493; (VENATOR), A., 486; (GASCHLER), A., 656; (PIUTTI and BOGGIO-LEA), A., 699; (HABER, JAENICKE, and MATTHIAS), A., 699, 922; (TIEDE, SCHLEEDER, and GOLDSCHMIDT), A., 922; (GARRETT; SMITS), A., 1015; (SIEMENS & HALSKE), (P.), B., 370.
 sludge, spent, regeneration of, from manufacture of acetaldehyde (VEREIN F. CHEM. IND. and WALTER), (P.), B., 217.

- Mercury**, production of materials containing, in a finely-divided, stable condition (I. G. FARBFENIND.), (P.), B., 899.
- vapour, toxicity of (STOCK), A., 707, 815; (SCHMIDT; PINKUS; REIHLEN; GRADENWITZ; WOLFF), A., 815; (HOFFER), A., 1223.
- Mercury alloys (amalgams)**, distillation of (MIETHE and STAMMREICH), A., 119.
- resistivity and conductivity of (EDWARDS), A., 783.
- order of removal of metals from (RUSSELL, EVANS, and ROWELL), A., 911.
- interaction of salt solutions and (SMITH), A., 796.
- liquid, use of, in volumetric analysis (SOMEYA), A., 702, 705, 1116, 1117.
- with aluminium, decomposition and reducing power of (HAHN and SCHLEIPEN), A., 695.
- action of, on formylglycine and *dl*-formyl-leucine (FODOR and FRANKEL), A., 1234.
- with base metals, rate of solution of, in acids (FRAENKEL), B., 366.
- with calcium (EILERT), A., 356.
- preparation of, by electrolysis (EILERT), (P.), B., 332.
- with gold (BRITTON and MCBAIN), A., 474.
- with iron, potential of (HEYROVSKÝ and SOUČEK), A., 910.
- with lead (MILLER), (P.), B., 496.
- with potassium and with sodium, vapour pressure of (POINDESTER), A., 897.
- with sodium, electrolysis of (KREMANN, KRIEGHAMMER, and GRUBER-REHENBURG), A., 801.
- Mercury compounds**, effect of, on germination of seeds (MEYER), B., 416.
- elimination of (ROWE), A., 976.
- Mercury salts**, photolysis of, in presence of zinc oxide (PERRET), A., 366.
- rhythmic reactions of, in gelatin jellies (ORLOVSKI), A., 675.
- germinal suspensions of (SAXL and KRIWATSCHEK), (P.), B., 772.
- antiseptic action of (KEESER), A., 864.
- Mercury oxychlorides (CAROZZI)**, A., 782.
- halides, solubility of, in water (BRODSKY and SCHERSCHWEYER), A., 247.
- halides (MANLEY), A., 486.
- hydride, structure and band spectrum of (MULLIKEN), A., 452.
- Mercuric salts**, action of, on dialkylbarbituric acids (FLEURY), A., 420.
- Mercuric bromide** paper for detection of arsenic (KEMMERER and SCHRENK), A., 928.
- chloride, association of (BOURION and ROUYER), A., 796.
- equilibria of ammonium and potassium chlorides, water, and (OSAKA and ANDO), A., 26.
- equilibrium of potassium oxalate, water, and (TRIFONOV), A., 246.
- reduction of, by ammonium oxalate in presence of light (BECHTEREV), A., 920.
- fission of azimethines with (SACHS, DRESSLER, and SMIRZITZ), A., 392.
- for timber impregnation (FALCK and MICHAEL), B., 276.
- poisoning by. See under Poisoning.
- determination of (RUPP and MAISS), A., 140; (v. BRUCHHAUSEN and HANZLIK), A., 592.
- determination of, in pastilles (RUPP, MÜLLER, and MAISS), B., 849.
- iodide, effect of blue and red light on conductivity of (KÄMPF), A., 891.
- crystal structure of (HAVIGHURST), A., 114.
- allotropy of (LOSANA), A., 908.
- action of protective colloids on (SAMESHIMA and SUZUKI), A., 795.
- equilibrium of potassium iodide, acetone, and (PERNOT), A., 695.
- red, crystal structure of (BIJVOET, CLAASSEN, and KARSEN), A., 889.
- determination of (SANDLANDS), B., 405.
- sulphide, allotropy of (BOURGEAUD), A., 803.
- red, rhythmic precipitation of suspensions of (MOROSOV), A., 679.
- toxicity of (NIKLAŠSON and SANTESSON), A., 1274.
- Mercurous chloride (calomel)**, oxidation of, on keeping (RABALD), A., 810.
- electrodes. See under Electrodes.
- Mercury** :—
- Mercurous halides**, crystal structure of (HYLLERAS), A., 114, 665; (HAVIGHURST), A., 995.
- iodide, thermodynamics of (ISHIKAWA and SHIBATA), A., 1103.
- nitrate, action of, on chloroauric acid (POLLARD), A., 487.
- Mercury organic compounds** (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 218.
- colloidal, manufacture of, soluble in water (FARBENFABR. VORM. BAYER & Co.), (P.), B., 691.
- with glutaric acid (VERKADE), A., 820.
- with hydroxybenzenesulphonic acids and their homologues, preparation of solutions of (CHEMOSAN A.-G.), (P.), B., 299.
- of substituted phenols (FARB. v. BAYER & Co.), (P.), B., 340.
- with pyrroles (FISCHER and MÜLLER), A., 75.
- Mercury compounds with substituted acetylenes** (JOHNSON and McEWEN), A., 495.
- with alkylphenols and alkylphenolaldehydes (HENRY and SHARP), A., 1162.
- di-m*-chloro-*o*-aminophenyl (VECCHIOTTI and MICETTI), A., 1163.
- di-5-(2:4-diphenyl)selenophen* (BOGERT and ANDERSEN), A., 311.
- di-n*-heptyl (HAGER and MARVEL), A., 1232.
- diphenyl, reactions of, with acyl halides (CALVERY), A., 629.
- Mercuric alkyl bromides and iodides** (MARVEL, GANERKE, and HILL), A., 144.
- halides, complex salts of, with quinoline and alkyl halides (DEHN and COPE), A., 1257.
- Mercuriacetic acid**, allyl ester (SCHOELLER), (P.), B., 465.
- Mercuri-*p*-allyloxybenzenesulphonic acid**, sodium salt (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 218.
- Mercuri-azobenzene-4'-sulphonic acid**, 4-hydroxy-3-chloro-, sodium salt (WHITMORE, HANSON, and LEUCK), A., 629.
- Mercuribenzoic acid**, 3-amino-4:5-dihydroxy-, 3-acetyl derivative (MASCHMANN), A., 1265.
- p*-bromo-*p*-chloro-, *p*-hydroxy-, and *p*-iodo-, and their salts and esters (WHITMORE and WOODWARD), A., 534.
- Mercuribenzoic acids**, aminohydroxy-, and their acetyl derivatives (MASCHMANN), A., 1265.
- p*-Mercuribisbenzoic acid, and its sodium salt (WHITMORE and WOODWARD), A., 534.
- 6-Mercuribis-2:4-dichloroaniline** (VECCHIOTTI and CARANI), A., 748.
- 4-Mercuribis-2-nitrotoluene** (COFFEY), A., 629.
- Mercuri-3:5-dibromo-4-allyloxybenzene-1-carboxylic acid** (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 218.
- Mercuribromoform**, bromo- (SACHS and BALASSA), A., 596.
- Mercuri-3-chloro-4-allyloxybenzene-1-carboxylic acid** (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 218.
- Mercuridiphenyl sulphide**, *p*-chloro- (SACHS and OTT), A., 396.
- Mercuri-3-methyl-6-isopropylbenzaldehyde**, 4-hydroxy-5-chloro- (HENRY and SHARP), A., 1163.
- Mercuri-2-nitrotoluene**, 4-bromo-, chloro-, and 4-iodo- (COFFEY), A., 629.
- Mercuriphenylarsinic acid**, 3-amino-4:5-dihydroxy-, and 3:5-di-amino-4-hydroxy-2-chloro-, acetyl derivatives (MASCHMANN), A., 418.
- Mercuriphenylnaphthylamine** (ROSSI and CECCHETTI), A., 312.
- Mercurisulphalicylic acids**, cyano-, constitution of (RUPP and GERSON), A., 534.
- Mercurisulphalicylic acid**, sodium salt, optical anisotropy of coloured sols of (BERKMANN and ZOCHER), A., 1097.
- Mercuri-5-sulphalicylic acid**, 3-chloro-, sodium salt (OSTWALD and MERTENS), A., 1097.
- Mercuritoluene-4-sulphonic acid**, 2-hydroxy-, and its hydrate acid anhydride (WHITMORE and EHRENFELD), A., 534.
- Mercury detection, determination, and separation** :—
- detection of (BOOTH and SCHREIBER), A., 40.
- detection of, spectroscopically (MANLEY), A., 376.
- detection and determination of, with aluminium (DENIS), A., 703.
- determination of (TER MEULEN), A., 492; (EVANS and CLARKE), A., 704; (ROSENDAHL), B., 243.
- determination of, in small quantities (STOCK and HELLER), A., 703; (BOOTH, SCHREIBER, and ZWICK), A., 929.
- determination of, colorimetrically, in small quantities (STOCK and POHLAND), A., 814.
- determination of, iodometrically (KRAUS), A., 592.
- determination of, volumetrically, with potassium cyanide (JELLINEK and CZERWINSKI), A., 262.

Mercury detection, determination, and separation:—

- determination of, volumetrically, alone and with other metals (ZINTL and RIENÄCKER), A., 929.
- determination of, in toxicology (KOHN-ABREST), A., 328.
- determination of gold dissolved in (TAMMANN and KOLLMANN), A., 377.
- separation of, from gold (DUHME and LOTZ), A., 930.
- Mercury anodes. See under Anodes.
- Mercury cathodes. See Cathodes.
- Mercury dyes, therapeutic action of, on bacterial infections (RAIZISS, SEVERAC, and MOETSCH; WALKER and SWEENEY), A., 320.
- Mercury electrodes. See under Mercury.
- Mercury lamps. See under Lamps.
- Mesityloxyacetic acid (STEINKOFF and HÖPNER), B., 624.
- Mesityl oxide, preparation and specific gravity of (YLLNER), A., 714.
- synthesis of, from acetone (GASOPOULOS), A., 1125.
- absorption spectra of (MORTON), A., 453.
- condensation of, with aliphatic ketones (EKELEY and CARPENTER), A., 1143.
- chlorohydrins of (PASTUREAU and BADER), A., 1227.
- Mesitylenephosphinous acid, solubility and conductivity of (CREIGHTON), A., 1104.
- Mesityloxido-oxalic acid, ethyl ester, absorption spectra of (MORTON and ROGERS), A., 454.
- Mesoporphyrin, preparation of (FISCHER and PÜTZER), A., 854.
- isoMesoporphyrin, and its sodium salt and methyl ester (FISCHER and TREIBS; FISCHER and HALBIG), A., 1256.
- Mesothorium, action of radiations from, on selenium (DEL REGNO), A., 666.
- Mesothorium-2, chemical properties of (GLEDITSCH and CHAMIE), A., 332.
- disintegration of (HAHN and ERBAOHER), A., 990.
- separation of (YOVANOVITCH), A., 331.
- Mesoxalic acid, reaction of, with carbamide (BILTZ and SCHLIE-MANN), A., 739.
- Mesquite gum, L-arabinose from (ANDERSON and SANDS), B., 169.
- Metabolism, effect of ultra-violet light on (CAMPBELL), A., 755.
- influence of radiation on (PINOUSSEN and MAKRIKNEOS; PINOUSSEN), A., 90.
- effect of radium on (ROSENBLOOM), A., 199.
- in rarefied air (LAUBENDER), A., 84, 199.
- influence of temperature on (DHAR), A., 860.
- effect of muscular work on, with varied diets (CATHCART and BURNETT), A., 755.
- relation of the spleen to (A. and L. PALLADIN), A., 90.
- importance of fat in the action of the thyroid on (ABELIN, GOLDENER, and KOBORI), A., 973.
- in avitaminosis (BICKEL), A., 326.
- animal, effect of polarised light on (BHATNAGAR, LAL, and MATHUS), A., 863.
- bacterial (KENDALL and ISHIKAWA; RONA and NICOLAI), A., 868; (KENDALL and KEITH; KENDALL, DAY, and WALKER), A., 1062.
- of acid-fast bacteria (KONDO), A., 96.
- in dogs, effect of light and darkness on (MAYERSON, GUNTHER, and LAURENS), A., 319.
- of women (OKEY and ERIKSON), A., 973.
- of aromatic acids (MUENZEN, CERECEDO, and SHERWIN), A., 539, 972; (NOVELLO, MIRIAM, and SHERWIN), A., 638.
- of amino-acids and fatty acids (DAKIN), A., 428.
- of arginine and histidine (STEWART), A., 198.
- calcium and mineral, effect of white phosphorus on (BERNHARDT and RABL), A., 1056.
- calcium, nitrogen, and phosphorus, effect of diets of fresh and treated milk on (MAGEE and HARVEY), A., 970.
- calcium and phosphorus, effect of ovariectomy on (DALSACE and GUILLAUMIN), A., 1056.
- of lactating animals, effect of ultra-violet light on (HENDERSON and MAGEE), A., 638.
- in thyroparathyroidectomised dogs (GREENWALD), A., 425.
- carbohydrate (ANDERSON and CARRUTHERS; KERMACK, LAMBIE, and SLATER), A., 861; (LUNDGAARD and HOLBOLL), A., 861, 1061; (WIEZUCHOWSKI), A., 979; (LUNDGAARD, HOLBOLL, and GOTTSCHALK), A., 1171.
- effect of ions on (HEIANZAN), A., 426.
- biocatalysts in (v. EULER and MYRBÄCK), A., 205; (ABDERHALDEN), A., 325.
- effect of injected plant extracts on (DOBREFF), A., 98.
- in relation to creatine (PALLADIN), A., 90.

- Metabolism, carbohydrate, effect of a fat diet on (TAKAO), A., 973.
- in glycolysis (HOLBOLL), A., 1051.
- effect of ligation of the hepatic artery on (COLLENS, SHELLING, and BYRON), A., 1271.
- importance of phosphorus in (ABELIN), A., 1170.
- of infants (TISDALL, DRAKE, and BROWN), A., 861.
- of mice, influence of sugar and of insulin on (BISSINGER and LESSER), A., 436.
- of muscle, rôle of phosphates in (BEATTIE and MILROY), A., 637.
- and phosphoric acid, relation between (FÜRTH and MARIAN), A., 428.
- and protein, relation of creatine to (LIEBEN and LÁSZLO), A., 1272.
- intermediate carbohydrate (BRUGSCH, CAHEN, and HORSTERS), A., 197; (BRUGSCH, HORSTERS, and NARITA; BRUGSCH, HORSTERS, and HARADA), A., 198; (BRUGSCH and HORSTERS), A., 198, 1055; (DUDLEY), A., 640.
- cholesterol (YAMAGUCHI), A., 860.
- and fat, influence of vitamin-A on (LIANG and WACKER), A., 207.
- creatinine and uric acid (ZWARENSTEIN), A., 973.
- fat intermediary (TAKAO), A., 973.
- gaseous, effect of chemical agents on (KOCHMANN), A., 540.
- of small animals, apparatus for investigation of (HELLER), A., 197.
- human, effect of muscular exercise on (FURUSAWA), A., 190.
- intermediary, of histidine (EDLBACHER), A., 1171.
- iodine (VEIL and STURM), A., 199; (v. FELLEBERG), A., 1056.
- of animals (NIKLAS, SCHWAIBOLD, and SCHARRE), A., 638.
- iron, after splenectomy (IRGER), A., 540.
- magnesium, on purified diet (MEDES), A., 862.
- nitrogen, effect of light on (FONTES and YOVANOVITCH), A., 319.
- effect of vitamin-A deficiency on (MORGAN and OSBURN), A., 436.
- minimum endogenous (SMITH), A., 755.
- of infants (ELLINGHAUS, MÜLLER, and STEUDEL), A., 197.
- and sulphur (WILSON), A., 428.
- nuclein (THANNHAUSER, LURZ, and v. GARA), A., 973.
- pentose (CORLEY), A., 1271.
- phosphate (DEMUTH), A., 322.
- effect of carbohydrates on (ABELIN), A., 539.
- phosphorus, effect of insulin on (KOŁODZIEJSKA and FUNK), A., 643.
- of higher plants (BODNÁR), A., 439.
- protein, effect of temperature on (YOUNGBURG and FINCH), A., 862.
- effect of histamine on (HILLER), A., 974.
- effect of morphine on (VÖLKER), A., 974.
- in pancreatic diabetes (v. FALKENHAUSEN), A., 89.
- purine (TRUSZKOWSKI), A., 638.
- salicylic acid (HOLMES), A., 90.
- sulphur (G. T. and H. B. LEWIS), A., 1056; (LEWIS and WILSON), A., 1068.
- in dogs (CALLOW and HELE; COOMBS and HELE), A., 862.
- uric acid (McDONALD, LEVINE, and GLEASON), A., 1277.
- of zinc compounds in relation to calcium metabolism (FAIRHALL), A., 1273.
- Metachloroaurin (FOX), A., 313.
- Metacinnabarite, crystal structure of (HARTWIG), A., 664.
- Metals, structure of (FOLEY), B., 59.
- crystalline structure of (ANDREW), B., 278.
- manufacture of, (DANIELL, KALLING, and AKTIEBOLAET FERROLEOERINGAR), (P.), B., 18*; (CROESE), (P.), B., 674.
- in the electric furnace (GRÖNWALL), (P.), B., 548.
- electrolytic production of (DUHME and SIEMENS & HALSKE), (P.), B., 671.
- electrodeposition of (FRÖLICH and CLARK; CLARK and FRÖLICH), B., 131; (MADSEN and MADSENELL CORP.), (P.), B., 590.
- addition agents in (FUSEYA and MURATA), B., 950.
- on wire or strip (PARKER), (P.), B., 675.
- cathodic deposition of (FRÖLICH, CLARK, and ABORN), A., 804.
- extraction of (VENN-BROWN), (P.), B., 246*.
- by leaching (PERKINS and METALS PRODUCTION), (P.), B., 96, 198*.
- from ores (VAN ARSDALE, ALDRICH, SCOTT, and INSPIRATION CONSOLIDATED COPPER CO.), (P.), B., 548.
- from ore concentrates (FLECK and HALDANE), (P.), B., 444.
- volatilisation of, from ores (KNIGHT and WESTERN METALLURGICAL CO.), (P.), B., 756.

Metals, refining of (WESTBERG), (P.), B., 674; (MULLIGAN and U.S. SMELTING, REFINING, and MINING Co.), (P.), B., 833.
molten (LAPSLEY and METALS REFINING CORP.), (P.), B., 444.
apparatus for (HARRIS), (P.), B., 18*.
apparatus for refining or separation of (HARRIS), (P.), B., 283*.
treatment of (CROSSER and CHICAGO CRUCIBLE Co.), (P.), B., 283; (DANIELS, ZIMMERMAN, and WATSON), (P.), B., 591*; (MARKS and CHICAGO CRUCIBLE Co.), (P.), B., 635*.
to inhibit excessive grain growth (KELLEY and BUDD MANUF. Co.), (P.), B., 496*.
impure molten (HARRIS), (P.), B., 496*.
cementation of (COURNOT), B., 633.
heating of, to render workable (VAN METER), (P.), B., 440.
melting of (WESTFÄLISCHE STAHLGIES. OSSENBERG & Co.), (P.), B., 64; (WILLIAMS and McLAUGHLIN COAL REDUCTION Co.), (P.), B., 196; (DYER), (P.), B., 496, 1017.
melting and remelting of (SCHMIDT), (P.), B., 674.
smelting of (Soo. PROD. MÉTALLURGIQUES CONSTANT-BRUZAC), (P.), B., 549.
disintegration of (HALL and METALS DISINTEGRATING Co.), (P.), B., 245.
granulation of (BOGITCH), B., 547, 883*.
critically strained, restraint of exaggerated grain growth in (KELLEY and WINLOCK), B., 195.
effect of cold-working and quenching on elastic properties of (PORTEVIN and CHEVENARD), B., 59.
elastic after-effect in, at different temperatures (KÖNIG), B., 93.
cold drawing and rolling of (DE LATTRE and HARDY), (P.), B., 96.
tensile strength of, under a statical load (WELTER), B., 546.
testing the hardness of (HOUGH and TICKLE & Co.), (P.), B., 711.
testing penetration hardness of (WILSON), (P.), B., 370*.
stress-strain curves and hardness of (HOLLNAGEL), B., 921.
fatigue of (MOORE), B., 951.
by direct stress (IRWIN), B., 547.
plasticity of (SHOJI; SHOJI and MASHIYAMA), B., 752.
plastic deformation of (MEYER and NEHL), B., 95.
plastic deformation of single crystals of (GOUCHER), A., 891.
effect of temperature on behaviour of, in notched-bar impact test (GREAVES and JONES), B., 328*.
comparative slow bend and impact notched-bar tests on (PETRENKO), B., 57.
characteristics of (EUCKEN), A., 782.
X-ray examination of (PILON and LABORDE), A., 1194.
Röntgen-ray absorption limits for (ANDREWES, DAVIES, and HORTON), A., 214.
excitation of spectra of (NAOAKA, FUTAGAMI, and OBATA), A., 1069.
electrical excitation of vapours of (SCHULER), A., 876.
production of ultra-violet light by electron bombardment of (BRICOUT), A., 218.
emission of electrons by (DROSTE; GENERAL ELECTRIC Co. and GOSSLING), A., 448; (BRIDGMAN; MENDENHALL), A., 449.
in the cold (ROTHER), A., 1188.
emission of electrons and positive ions at the melting point of (WEHNELT and SEILIGER), A., 988.
photo-electric emission of electrons from (ROY), A., 1073.
secondary emission of electrons from (JACKSON), A., 1074.
pulling of electrons from, by electric fields (MILLIKAN and EYRING), A., 219.
stopping power of, for α -particles (CONSIGNY; ROSENBLUM), A., 879.
ratio e/m for (IONESCO), A., 448.
mechanism of conduction in (NASAROV), A., 878.
dual theory of conduction of (HALL), A., 665, 998.
electrical conductivity of (PROCOPIU), A., 666.
super-conductivity of (SIZOO and ONNES), A., 564; (ONNES), A., 891.
electrolysis of water and (SAXON), A., 365.
surface films in cathodic polarisation of (LIEBREICH), B., 546.
electrical resistance of (SIZOO and ONNES), A., 230.
effect of tension on the resistance of (BRIDGMAN), A., 565.
oxidation potentials of (BUTLER, HUGH, and HEY), A., 129.
pure, thermoelectric properties of (CASWELL), A., 1196.
thermo-electric effects and heat capacity of electrons in (EASTMAN), A., 449.
latent heat of fusion of (AWBERY and GRIFFITHS), A., 1087.
molten, heat of mixing of (MAGNUS and MANNHEIMER), A., 786.

Metals, density of (SAUERWALD), A., 786.
density in relation to molecular weight of (JOUNIAUX), A., 116.
vapour pressure of (RODERUSH and DIXON), A., 117.
and their oxides, evaporation of adsorbed water from (BHATNAGAR and BHATIA), A., 900.
liquid, surface tension of (BIRUMSHAW), A., 895.
molten, surface tension of (SAUERWALD and DRATH), A., 790.
properties of ions in the crystal lattice of (SCOTT), A., 994.
sublimation and crystallisation of (PECSALSKI), A., 461.
orientation of crystallites in conglomerates of (TAMMANN and MÜLLER), A., 459.
production of single crystals of, and their properties (CARPENTER), B., 792*.
recrystallisation of (HANEMANN), B., 161.
recrystallisation and recovery of (MASING), A., 561.
recrystallised cold-worked, crystal growth in (FEITKNECHT), B., 366, 792*.
pairs of, forming mixed crystals (VAN LIEMPT), A., 344.
diffusion of, through mercury (KREMANN and HRASOVEO), A., 477.
surface improvement of, by diffusion (GRUBE and v. FLEISCHBEIN), B., 749.
cleaning and preservation of (MARSH), (P.), B., 1015.
cleaning of, prior to plating (PEDERSEN and MADSENELL CORP.), (P.), B., 133.
prevention of scale formation on (FREEMAN and ANTISCALE CORP.), (P.), B., 176.
prevention of formation of crystals and scale on (ANTISCALE Co.), (P.), B., 952.
electrolytic removal of rust and scale from (SEAL Co., JASCOURT, PATTINSON, and ROSE), (P.), B., 196.
removal of deposit, scale, or incrustations from (RÜTSCHKE), (P.), B., 1018.
cold-deformation or corrosion fringes in (PORTEVIN), B., 328.
corrosion of (PALMAER), B., 589.
by acids (EVANS), A., 805; (McCULLOCH), A., 806.
by insulating pastes (REINER), B., 636.
liquid-line corrosion of (HEDGES), A., 581.
corrosion-resisting (JONES and GEN. ELECTRIC Co.), (P.), B., 832.
resistant to corrosion or high temperatures (FRENCH), B., 951.
coating of (MEKER; OTIS, HERREN, and NAT. BOILER WASHING Co. OF ILLINOIS), (P.), B., 884.
non-corrosive (HÄRDÉN and TILLQUIST), (P.), B., 1019.
protective coatings for (WEINTRAUB and Soo. ALSACIENNE DE CONSTRUCTIONS MÉCANIQUES), (P.), B., 245; (METALLBANK & METALLURGISCHES GES.), (P.), B., 412; (MELLQUIST), (P.), B., 792*.
electrical insulating coatings for (WEINTRAUB and Soo. ALSACIENNE DE CONSTRUCTIONS MÉCANIQUES), (P.), B., 756.
sprayed coatings of (SCHOOPE), (P.), B., 331, 833.
enamelling of (BECK, AUPPERLE, and AMER. ROLLING MILL Co.), (P.), B., 408*; (AUGER), (P.), B., 586.
plating of (SMITH), (P.), B., 197.
pickling of (THOMAS and HAWES), (P.), B., 62; (MARSH, COCHRAN, and AMER. COPPERAS Co.), (P.), B., 330; (KRONQUEST and ACME STEEL Co.), (P.), B., 412.
addition of substances to pickling baths for (CREUTZFELDT), B., 752.
chlorination of (BRALLIER), B., 820.
high-temperature oxidation of (DUNN), A., 692.
protection of, against oxidation (BRITISH THOMSON-HOUSTON Co. and HOWE), (P.), B., 496*.
from oxidation during melting (JUNKER), (P.), B., 133.
decarbonisation of (MARTIN and BERTELS), (P.), B., 132; (Soc. DES ACIÉRIES ET FORGES DE FIRMINY), (P.), B., 162.
deoxidation of (HUNT and AMER. MAGNESIUM CORP.), (P.), B., 62; (PACZ), (P.), B., 97.
not affected by carbon (HEUSE), (P.), B., 197.
desulphurisation of (EHRENBERG and others), (P.), B., 62.
rate of increase of thickness of films on (JUNG), A., 336; (TAMMANN and SIEBEL), A., 573.
gases in (JORDAN and ECKMANN), B., 94.
molten, combination of, with gases (POPPENHUSEN), (P.), B., 674.
adsorption of hydrogen by, and formation of hydrides (HÜTTIG), A., 254.
and their salts, molten, equilibria between (LORENZ, FRAENKEL, and GANZ), A., 799; (LORENZ), B., 244.

- Metals, effect of additions on the pyrophoric properties of (NIKITIN), A., 116.**
 action of ammonium chloride and of hydrogen chloride on (HOFMANN and HARTMANN), A., 37.
 action of ethylcarbylamino on catalysis by (TODA), A., 943.
 resistance of, to nitric acid (THOMPSON), B., 1017.
 action of nitric acid on (KLEMENC), A., 482; (JOSS), A., 1110.
 in presence of catalysts (PALIT and DHAR), A., 915.
 recovery of, from metalliferous material (WEMPLE), (P.), B., 444.
 from slags (ZANIOOLI), (P.), B., 331; (LE CUIVRE NATIF), (P.), B., 635*.
 treated in retorts, refining and utilisation of by-products from (TUTTLE), (P.), B., 369.
 gaseous fuel for cutting (HARRIS), (P.), B., 862.
 action of photographic fixing materials on (EULE), B., 29.
 behaviour of, with plastilin and free sulphur (BAUER and ARNDT), B., 327.
 differential dilatometer for (CHEVENARD), B., 365.
 or their oxides, manufacture of bricks containing (EHRENBERG, WIEDERHOLD, KRUG, HOLSBOER, FISCHER, and STUDIENGES. F. AUSBAU DER IND.), (P.), B., 364.
 displacement of, from their salt solutions (BARLOT), A., 1216.
 and their oxides, displacement of, from solution by hydrogen under pressure (IPATIEV, KLJUKVIN, KISSELEV, KONDYREV, and NIKOLAJEV), A., 921.
 precipitation of, from non-aqueous solutions (MÜLLER, SCHIMKE, and FARMAKIDES), A., 1016.
 poisoning of enzymes by, in presence of cyanides (JACOBY), A., 1058.
 solubility and determination of, used in cooking utensils (JÄRVINEN), B., 16.
 determination of, in biology, by the dropping mercury cathode (PRAT), A., 1184.
 determination of oxygen and hydrogen in (JORDAN and ECKMAN), B., 94.
 separation of (KIRBY), (P.), B., 591.
 separation of, by graded potentials (LASSIEUR), A., 1013.
 electrolytic separation of (BROWN), A., 483.
 apparatus for (DASSEBACH and IRVINGTON SMELTING & REFINING WORKS), (P.), B., 444.
 separation of, from glass melts (SPRINGER), B., 947.
- Metals, base, rate of solution of amalgams of, in acids (FRAENKEL), B., 366.**
 bearing (ROLFE), B., 832.
 cast, macrostructure of (GENDERS), B., 327, 792*.
 easily oxidisable, melting and refining of, and their alloys (ARNEMANN), (P.), B., 833.
 casting of (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 549*.
 of the chromium group, uniting copper or its alloys to (BAGLEY and ELECTRO-METALLURGICAL CO.), (P.), B., 548.
 colloidal. See Colloidal metals.
 compound (BYRNES), (P.), B., 63.
 ductile, heat treatment of (BUDD MANUF. CO.), (P.), B., 411.
 earth, apparatus for manufacture of (DOLTER), (P.), B., 446*.
 ferrous, rust-proofing of (HENDRICK), (P.), B., 163.
 production of corrosion-resisting coatings on (PFEIL), (P.), B., 133.
 coating of, with aluminium and its alloys (PFEIL), (P.), B., 133.
 pickling of (PORTER, WHETZEL, and AMER. SHEET & TIN PLATE CO.), (P.), B., 368.
 heavy, vacuum spark spectra of (CARROLL), A., 214.
 electrodeposition of, from fused electrolytes (SAUERWALD and NEUENDORFF), B., 131.
 catalysis by (WERTHEIMER), A., 582.
 poisoning by. See under Poisoning.
- of the iron group and their alloys with the platinum metals as catalysts (REMY and GÖNNINGEN), A., 134.**
 separation of (LONGINESCU and CHABORSKI), A., 592.
 light, recovery of, from scrap (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 331*.
 and their carbides, action of, with molten potassium thiocyanate (BIESALSKI and VAN ECK), A., 1218.
 non-ferrous, melting of, in the electric furnace (TAMA), B., 161.
 melting and refining of (BARRETT Co. and CUSHING), (P.), B., 97*.
 endurance properties of (MCADAM), B., 16.
 "atomised" coal for smelting of (BLACK and SHAFER), B., 328.
- Metals of the platinum group, under-water spark spectra of (CLARK and COHEN), A., 766.**
 of the platinum group, lattice constants of (BARTH and LUNDE), A., 114, 664, 1195.
 catalysis by (LEVI and HAARDT), A., 365, 693.
 concentration of ores containing (MINERALS SEPARATION, LTD. and MOULDEN), (P.), B., 952.
 alloys of, with metals of the iron group as catalysts (REMY and GÖNNINGEN), A., 134.
 thermal dissociation of chloro-salts of (GIRE), A., 27.
 analysis of (OGBURN), A., 1117.
 determination of, potentiometrically (MÜLLER), A., 1222.
 separation of (WÖHLER and METZ), B., 160.
 separation and purification of (HOOPER), (P.), B., 547.
 precious, refining residues of (LAU), (P.), B., 64.
 analysis of "doubles" and solder-filled wires of (SAUERLAND), B., 159.
 rare, recovery of, from ores (THEWS and BELL), (P.), B., 444.
 fusion of ores of (SEARS), B., 282.
 preparation of oxides of, for electric lamps (HEANY), (P.), B., 834.
 refractory, production of (MARDEN, VAN VOORHIS, and WESTINGHOUSE LAMP CO.), (P.), B., 330.
 manufacture of thin sheets of (GEN. ELECTRIC CO. and PATENT TREUHAND GES. F. ELEKTR. GLÜHLAMPEN), (P.), B., 370*.
 working of (LEDERER and WESTINGHOUSE LAMP CO.), (P.), B., 766*.
 rods consisting of very large crystals of (N.V. PHILIPS' GLOEILAMPENFABR.), (P.), B., 132.
 strained, Röntgen-ray structure of (ONO), A., 112.
 strain-hardened, softening of (BAILEY), B., 366, 792*.
 volatile, extraction of, from ores (JOHNSON), (P.), B., 984.
 smelting ores of (OGG), (P.), B., 369.
 condensing apparatus for production of (JURETZKA), (P.), B., 675*.
- Metal ammonium compounds, pharmacology of (KÜLZ), A., 319.**
 Metal castings, heat treatment of (WILL), (P.), B., 792.
 improvement of (ESTEREN), (P.), B., 1018.
 Metal chips, briquettes of (GAIL), (P.), B., 412.
 Metal compositions (BRITISH THOMSON-HOUSTON CO. and ADAMS), (P.), B., 710.
 Metal dust, manufacture of (SHIMADZU), (P.), B., 549*.
 apparatus for manufacture of (NEWELL and ALLOYS CO.), (P.), B., 163.
 composition for affixing, to articles or surfaces (BRADLEY and RATTEW), (P.), B., 1018.
- Metal wires, spectra of exploding (DÉCHÈNE), A., 446.**
 influence of adsorbed gas on electrical resistance of (SEXL), A., 1196.
 effect of torsion on elastic properties of (EDWARDS, BOWEN, and ALTY), A., 891.
 single-crystal, production of (FREY and GOMPERZ), (P.), B., 833.
- Metallic articles, protective coatings for (METALLISATION, LTD. and BALLARD), (P.), B., 984.**
 azides, modification of the brisance of (BROCKENBACH and RÖRIG), B., 254.
 bromides and iodides, bromine and iodine tensions of (JELLINEK and ULOTH), A., 463.
 chlorides, solid, equilibrium of oxygen with (JELLINEK and RUDAT), A., 909.
 anhydrous, manufacture of (WÖHLERS and ANHYDROUS METALLIC CHLORIDES CORP.), (P.), B., 126.
 decomposition potentials and polarisation of, in anhydrous pyridine (MASON and MATHEWS), A., 31.
 fused, density of (KLEMM and ROCKSTROH), A., 669.
 chlorine tensions of (JELLINEK and ULOTH), A., 682.
 additive compounds of hydrocyanic acid and (STOLTZENBERG), (P.), B., 583.
 coatings, electrolytic deposition of, on metals (BARLOW), (P.), B., 985.
 on porous non-metallic bases (RIFFER and POLLAK), (P.), B., 64*.
 halides, recovery of, from hydrocarbon sludges (DANNER and STANDARD OIL CO.), (P.), B., 675.
 compounds of alkali halides with (VOURNAZOS), A., 372.
 double decomposition of, and halides of metalloids (KARANTASSIS), A., 812.

- Metallic hydrides, solid, vacuum analysis of (WEEKS), A., 139.
 hydroxides, magnetic properties of, when treated with water (VEIL), A., 567.
 decomposition of hydrogen peroxide by, and their magneto-chemistry (VEIL), A., 567.
 iodides, action of, on $\alpha\beta$ -dibromo-compounds (VAN DUIN), A., 612.
 ions, pharmacology of changes of concentration of (JENDRASSIK and ANNAU), A., 91.
 nitrides, manufacture of, in admixture with lithium nitride and amide (Soc. d'ÉTUDES MINIÈRES & INDUSTRIELLES), (P.), B., 1013.
 oxides, heat capacity and entropy of (PARKES and KELLEY), A., 232.
 smelting of, in suspension (KRUPP GRUSONWERK), (P.), B., 134.
 reduction of (PRATT), (P.), B., 445.
 reactions between fatty acids and, in the colloidal state (STERKERS and BREDEAU), A., 792.
 finely-divided, manufacture of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 979.
 catalytic decomposition of sodium hypochlorite solutions by (CHIRNOAGA), A., 916.
 incandescent, structure of (BÖHM), A., 113.
 refractory, sintering and melting of (ROMBACHER HÜTTENWERKE and BROWN), (P.), B., 134.
 phosphides and sulphides, electrolysis of (KREMANN and BAUKOVAC), A., 802.
 salts, scattering of light by solutions of (SWEITZER), A., 15.
 effect of complex ions on the paramagnetism of (SHAFFER and TAYLOR), A., 567.
 electrical conductivity of mixtures of (FISCHER), A., 478.
 electrical conductivity of single crystals and of compressed pastilles of (TAMMANN and VESZI), A., 461.
 heat of dilution of, at low concentrations (NERNST and ORTHMANN), A., 579.
 surface tension and activities of aqueous solutions of (GOARD), A., 20.
 reduction of neutral and acid solutions of (BARDT), (P.), B., 822.
 heated, emission of ions from (SCHMIDT), A., 877.
 hydrated, dehydration of (RAKUZIN and BRODSKI), B., 1011.
 solid, temperature-conductance curves of (PIPPS, LANSING, and COOKE), A., 231.
 compounds of carbon monoxide with (MANCHOT), A., 138; (MANCHOT and GALL), A., 694, 698; (MANCHOT and KÖNIG), A., 698.
 action of organic bases on (FISCHER), A., 492.
 sulphates, manufacture of solutions of (KLEINMANN), (P.), B., 156.
 thermal decomposition of (MARCHAL), A., 27, 127, 359, 924.
 compounds of ammonia with (EPHRAÏM), A., 809.
 additive compounds of hydrogen chloride with (EPHRAÏM), A., 587.
 action of fluorine with solutions of (FICHTER and HUMPERT), A., 925.
 action of silica on (MARCHAL), A., 487.
 of the heavy metals, additive compounds of hydrogen chloride and (EPHRAÏM), A., 36.
 sulphides, reflecting power of (ASAGOE and KUMAGAI), A., 892.
 phosphorescence of (GUNTZ), A., 885.
 crystal structure of (RAMSDELL), A., 228.
 smelting of, in suspension (KRUPP GRUSONWERK), (P.), B., 134.
 reduction of (BECKMAN and BECKMAN-LINDEN ENGINEERING CORP.), (P.), B., 548.
 reaction between sulphur dioxide and (MILBAUER and TUCEK), B., 495.
 heavy, action of, with alcoholic solutions of heavy metal salts (ROSENTHALER), A., 811.
 reduction of, by barium oxide (BILTZ and v. MÜHLENDahl), A., 136.
 powdered and compressed, detector action of, compared with their natural analogues (TREY), A., 115.
 influence of neutral salts on precipitation of (DEDE and BECKER), A., 588.
 surfaces, protection of, against incrustation and corrosion (THALHOFFER and A.-G. F. CHEM. IND. IN LIECHTENSTEIN), (P.), B., 472; (THALHOFFER), (P.), B., 776.
 Metallic surfaces, cinnoblement of (GUERTLER), (P.), B., 64.
 Metallic organic compounds, water-soluble (KHARASCH), (P.), B., 899.
 Metallography, high-power (LUCAS), B., 280, 281.
 striation duo to working or to corrosion in (PORTEVIN), B., 327, 792*.
 Metalloids, and their oxides, displacement of, from solution by hydrogen under pressure (IPATIEV, KLJUKVIN, KISSELEV, KONDYREV, and NIKOLAJEV), A., 921.
 trivalent, double decomposition of haloids of, and metallic halides (KARANTASSIS), A., 812.
 Metallurgical baths, introduction of additional agents into (NIELSEN), (P.), B., 674.
 Metallurgy, fifty years' progress in (CORSE), B., 832.
 Metaporphyrin dimethyl ether, dichloro- (KÜSTER and ZIMMERMANN), A., 748.
 Meteoric iron, crystal structure of (YOUNG), A., 1084.
 Meteoric stones, Cobija and Lampa (MOUNTAIN), A., 1119.
 Meteorites from the Haute-Volta (LACROIX), A., 112.
 Widmannstätten structure in (KASÉ), B., 277.
 iron-nickel, physico-chemical equilibrium of (PESCHARD), B., 58.
 Methæmoglobin, formation of (MEIER), A., 314; (VAN SLYKE and VOLLMUND), A., 423; (ROCHE), A., 750.
 spectrum of (DOLLMEYER and FOURNIER), A., 1080.
 oxygen content of (NICLOUX and ROCHE), A., 314, 750; (BALHAZARD and PHILIPPO), A., 423; (CONANT and SCOTT), A., 1050.
 conversion of, into oxyhæmoglobin (SAKURAI), A., 85.
 sensitivity of oxyhæmoglobin and, to reducing agents (NICLOUX and ROCHE), A., 1050.
 determination of, gasometrically (VAN SLYKE), A., 443.
 Methane (*freedamp*), formation of, from carbon monoxide (JAEGER and WINKELMANN), B., 698.
 manufacture of (Soc. d'ÉTUDES MINIÈRES ET IND.), (P.), B., 524.
 liberation of, in coal distillation (L'AIR LIQUIDE), (P.), B., 350.
 molecular structure of (GUILLEMIN; DENNISON), A., 1083.
 structure and, infra-red absorption spectra of (COOLEY; DENNISON), A., 659.
 ionisation potential of (GLOCKLER), A., 993.
 and its chloro-derivatives, temperature sensitivity of dielectric constants for (SÄNGER), A., 993.
 thermal decomposition of (CANTELO), A., 798; (SCHWAB and PIETSCH), A., 918.
 at a glowing filament (SCHWAB and PIETSCH), A., 1109.
 catalytic oxidation of (MEDVEDEV), A., 1012.
 ignition of (COWARD and WHEELER; NAYLOR and WHEELER), B., 179.
 mixtures of air and, by momentary flames (WALLS and WHEELER; RINTOUL and WHITE), B., 730.
 electric ignition of, by alternating and continuous currents (WHEELER), B., 426.
 inflammability of mixtures of air and (BURGESS and WHEELER), B., 114.
 inflammability of, in atmospheres containing blackdamp (COWARD and HARTWELL), B., 426.
 propagation of flame in mixtures of air and (CHAPMAN and WHEELER), B., 970.
 extinction of flames of, by diluent gases (COWARD and HARTWELL), A., 805.
 projection of flame in explosions of (BURGESS), B., 906.
 explosions of, within closed vessels (MAXWELL and WHEELER), B., 179; (FENNING), B., 258.
 liquid-air blasting cartridges for use in presence of (SPRENGLUFT GES.), (P.), B., 388.
 detection of small amounts of (Ges. F. PRAKT. GEOPHYSIK), (P.), B., 182.
 detection of, electrically (GRICE and GULLIFORD), B., 906.
 apparatus for detection of (SEJVL, WINKLER, and PALKON), (P.), B., 940.
 detection of carbon monoxide in (WEIN), B., 225.
 determination of, in illuminating gas (STEUER), B., 3.
 apparatus for determination of, in metabolism experiments (CARPENTER and FOX), A., 1184.
 Methane, chloro-derivatives, manufacture of (KARPEN & Bros.), (P.), B., 253; (CARTER, COXE, and KARPEN & Bros.), (P.), B., 420.
 dichloro-. See Methylene chloride.

- Methane, halogen derivatives, absorption spectra of (LOWRY and SASS), A., 454.
 infra-red absorption spectra of (ELLIS), A., 883.
 hydroxylamino-, oxalate (SCHMIDT, ASCHERL, and MAYER), A., 45.
 nitro-, physical properties of (WILLIAMS), A., 15.
 colloidal systems in (WILLIAMS and SKOGSTROM), A., 1095.
 tetranitro-, removal of, from trinitrotoluene (GÄRTNER), (P.), B., 110.
 Methanedisulphonic acid, hydroxy-, salts, true nature of (RASCHIG and PRAHL), A., 1123.
 Methanesulphonic acid, *mono*- and *di*-bromo-, and their barium salts (BACKER), A., 49.
 hydroxy-, potassium salt, true nature of (RASCHIG and PRAHL), A., 1123.
 hydroxylamino-, hydroxylimino-, and imino-, potassium salts (RASCHIG and PRAHL), A., 939.
 Methanol. See Methyl alcohol.
 Methanolbisethylenediamminocupric iodide (MORGAN and BURSTALL), A., 1027.
 Methoxide, sodium, action of, on derivatives of *o*-dichlorobenzene (KRAAY), A., 1034.
o-Methoxyacetophenone, *p*-hydroxy- (ROBERTSON and ROBINSON), A., 956.
 3-Methoxy-*p*-acetotoluidide, 2-nitro- (ROBINSON and SHINODA), A., 1048.
o-Methoxyacetoxyacetoveratrone (FREUDENBERG and SMEYKAL), A., 274.
 β -Methoxy- α -acetoxymercuri- β -phenylpropionic acid, *l*-menthyl ester (SANDBORN and MARVEL), A., 747.
 8-Methoxy-3-acetylcarbostyryl, and its phenylhydrazone (TRÖGER and DUNKER), A., 68.
 4-Methoxyacetylsalicylic acid, 5-bromo-, ethyl ester (FRIES and SAFTIEN), A., 849.
 2-Methoxyaminotoluene, 3:5-dinitro- (BORSCHKE and FESKE), A., 605.
 8-Methoxy-3-*o*-anisolesulphonyl-2-*mp*-methylenedioxy-styrylquinoline (TRÖGER and KESTENBACH), A., 1258.
 8-Methoxy-3-*o*-anisolesulphonyl-2-methylquinoline, and its salts (TRÖGER and KESTENBACH), A., 1258.
 8-Methoxy-3-*o*-anisolesulphonyl-2- $\Delta\alpha$ -propenylquinoline (TRÖGER and KESTENBACH), A., 1258.
 8-Methoxy-3-*o*-anisolesulphonyl-2-styrylquinoline (TRÖGER and KESTENBACH), A., 1258.
 7-Methoxy-4-*p*-anisyl-2-*p*-dimethylaminostyryl-3-methylbenzopyrylium salts (HEILBRON and ZAKI), A., 1042.
 7-Methoxy-4-*p*-anisyl-2:3-dimethylbenzopyrylium salts (HEILBRON and ZAKI), A., 1042.
 4-Methoxy-2- β -anisylethylquinoline, and its hydrochloride (TRÖGER and DUNKER), A., 526.
 7-Methoxy-4-*p*-anisyl-2-*p*-hydroxystyryl-3-methylbenzopyrylium salts (HEILBRON and ZAKI), A., 1042.
 7-Methoxy-4-*p*-anisyl-2-*p*-methoxystyryl-3-methylbenzopyrylium salts (HEILBRON and ZAKI), A., 1042.
 8-Methoxy-3-*o*-anisylsulphonylquinoline, 2-amino- (TRÖGER and FROMM), A., 69.
 Methoxyanthrones, hydroxy-, and their diacetyl derivatives (MILLER and PERKIN), A., 174.
 8-Methoxy-3-arylsulphonyl-2-methylquinolines, influence of 3-methoxyl group in (TRÖGER), A., 1258.
o-Methoxybenzaldehyde *p*'-nitrophenylhydrazones (KALB and GROSS), A., 614.
 3-Methoxybenzaldehyde, 2-amino-, and its derivatives (TRÖGER and DUNKER), A., 68; (TRÖGER and GERO), A., 1045.
 6-amino-, and its derivatives (TRÖGER and FROMM), A., 69.
 chloro-derivatives and their derivatives (HODGSON and BEARD), A., 292.
 4-Methoxybenzaldehyde, 3:5-dinitro-, and its derivatives (DE LANGE), A., 278.
 2-Methoxybenzanilide, 5-nitro- (MEISENHEIMER, ZIMMERMANN, and v. KUMMER), A., 405.
 Methoxybenzanthrone, chloro- (THOMSON, THOMAS, and SCOTTISH DYES, LTD.), (P.), B., 868.
 3-Methoxybenzene, 1-chloro-2:4:6-trinitro- (SCHLUBACH and MERGENTHALER), A., 284.
 4'-Methoxybenzeneazocyclopentan-2-one-1-carboxylic acid, 1:3:5'-diiodo-, ethyl ester (KALB, SCHWEIZER, ZELLNER, and BERTHOLD), A., 1152.
 8-Methoxy-3-benzenesulphonyl-2-*mp*-methylenedioxy-styrylquinoline (TRÖGER and PAPE), A., 1258.
 8-Methoxy-3-benzenesulphonyl-2-methylquinoline, and its salts (TRÖGER and PAPE), A., 1258.
 8-Methoxy-3-benzenesulphonylquinoline, 2-amino- (TRÖGER and FROMM), A., 69.
 8-Methoxy-3-benzenesulphonyl-2-styrylquinoline (TRÖGER and PAPE), A., 1258.
 2-Methoxybenzoic acid, 6-nitro-3-hydroxy- (RUBENSTEIN), A., 518.
 3-Methoxybenzoic acid, 2:6-dichloro- and 6-nitro-, and their derivatives (HODGSON and BEARD), A., 292.
 2-nitro-4-amino-, acetyl derivative (ROBINSON and SHINODA), A., 1048.
o- and *m*-Methoxybenzoic acids, 1- β -octyl esters (RULE and NUMBERS), A., 1038.
 2-Methoxybenzophenone, 5-nitro-, and its oxime (MEISENHEIMER, ZIMMERMANN, and v. KUMMER), A., 405.
 Methoxybenzophenones, fission of (LEA and ROBINSON), A., 1144.
 Methoxy-*p*-benzoquinone dichloride (DIMROTH, EBER, and WEHR), A., 296.
 Methoxybenzoylbenzoins (GREENE), A., 407.
o-*m*-Methoxybenzoyl-3:4-dimethoxyacetophenone, and its copper derivative (BRADLEY and ROBINSON), A., 1145.
o-Methoxybenzoylhydrazine, and its hydrochloride (KALB and GROSS), A., 614.
 3-Methoxybenzoylhydrazine, 4-hydroxy- (KALB and GROSS), A., 614.
 4-Methoxybenzoylformic acid, 5-bromo-2-hydroxy-, ethyl ester (FRIES and SAFTIEN), A., 849.
o-*m*-Methoxybenzoyl-*p*-methoxyacetophenone, and its copper derivative (BRADLEY and ROBINSON), A., 1145.
 4'-Methoxybenzoyl-1:2:3:5-tetrazole, 4:5'-bromo-2'-hydroxy-, and its derivatives (FRIES and SAFTIEN), A., 849.
o-Methoxybenzyl alcohol, naphthylurethane from (BICKEL and FRENCH), A., 517.
 2(?)-Methoxybenzyl methyl ether, 5-nitro- (KLIEGL, HÖLLE, and v. KLITZING), A., 720.
 2-*m*-Methoxybenzylidene-5:6-dimethoxy-1-hydrindone (PERKIN, RAY, and ROBINSON), A., 733.
 5-(3-Methoxybenzylidene)-2:3-diphenylisothiohydantoin, 5:4-hydroxy- (HANN and MARKLEY), A., 623.
o-Methoxybenzylidene-*o*'-methoxybenzoylhydrazine (KALB and GROSS), A., 614.
 2-Methoxybenzyloxyanisoles, nitro-derivatives (OXFORD and ROBINSON), A., 397.
 4-Methoxy-5-benzyloxy-2-*o*-methylaminoethyl-1-benzaldoxime (AKABORI), A., 957.
 6-Methoxy-7-benzyloxy-2-methyl-3:4-dihydroisquinolinium salts (AKABORI), A., 957.
 β -3-Methoxy-4-benzyloxyphenylethylformylmethylamide (AKABORI), A., 957.
 8-Methoxy-3-*p*-bromobenzenesulphonyl-2-*mp*-methylenedioxy-styrylquinoline (TRÖGER and KESTENBACH), A., 1258.
 8-Methoxy-3-*p*-bromobenzenesulphonyl-2-methylquinoline, and its salts (TRÖGER and KESTENBACH), A., 1258.
 8-Methoxy-3-*p*-bromobenzenesulphonyl-2- $\Delta\alpha$ -propenylquinoline (TRÖGER and KESTENBACH), A., 1258.
 8-Methoxy-3-*p*-bromobenzenesulphonylquinoline, 2-amino- (TRÖGER and FROMM), A., 69.
 8-Methoxy-3-*p*-bromobenzenesulphonyl-2-styrylquinoline (TRÖGER and KESTENBACH), A., 1258.
 6-Methoxy-2-(3':4':5'-tribromo-2':6'-dimethoxyphenoxy)benzoquinone, 3:5-dibromo- (HUNTER and LEVINE), A., 839.
 7-Methoxy-3-(6'-bromohomopiperonyl)-2-methyl-1:4-benzopyrone (BAKER), A., 732.
 β -Methoxy- α -bromomercuri- β -phenylpropionic acid, *l*-menthyl ester (SANDBORN and MARVEL), A., 747.
 8-Methoxy-3-*p*-chlorobenzenesulphonyl-2-*mp*-methylenedioxy-styrylquinoline (TRÖGER and KESTENBACH), A., 1258.
 8-Methoxy-3-*p*-chlorobenzenesulphonyl-2-methylquinoline, and its salts (TRÖGER and KESTENBACH), A., 1258.
 8-Methoxy-3-*p*-chlorobenzenesulphonyl-2- $\Delta\alpha$ -propenylquinoline (TRÖGER and KESTENBACH), A., 1258.
 Methoxy-3-*p*-chlorobenzenesulphonylquinolines, 2-amino- (TRÖGER and FROMM), A., 69.
 8-Methoxy-3-*p*-chlorobenzenesulphonyl-2-styrylquinoline (TRÖGER and KESTENBACH), A., 1258.
 β -Methoxy- α -chloromercuri- β -phenylpropionic acid, *l*-menthyl ester (SANDBORN and MARVEL), A., 747.

- 2:3-[7-Methoxychromeno(4:3)]-6:7-dimethoxybenzopyrylium ferri-chloride (PERKIN, RAY, and ROBINSON), A., 733.
- p*-Methoxycinnamic acid, α -bromo-, and α -3-dibromo-, and their esters (REIMER), A., 1139.
- Methoxycinnamonitriles, and their hydrochlorides (HOUBEN and PFANKUCH), A., 951.
- 4-Methoxy-*m*-cresol. See *iso*Cresol.
- 3-Methoxy-*p*-cresol, and its acetyl derivative, nitro-derivatives (OBERLIN), A., 283.
- 9-Methoxy-2:4-diketo-1:2:3:4-tetrahydro-1:3:10-naphthtriazine. See 9-Methoxy-1:3:10-naphthtriazine, 2:4-dihydroxy-.
- 7-Methoxy-4-*p*-dimethylaminophenyl-2:3-dimethylbenzopyrylium salts (HEILBRON and ZAKI), A., 1042.
- 7-Methoxy-2:4-dimethylbenzopyrylium chloroaurate (KEHRMANN and RIEDER), A., 732.
- 5-Methoxy-3:4-dimethylpyrazole (BACKER and MEIJER), A., 741.
- 12-Methoxy-4¹¹-diphensuccindadiene, 9-chloro- (BRAND, MÜLLER, and KESSLER), A., 1135.
- Methoxydiphenyl ethers, and their nitro-derivatives (LEA and ROBINSON), A., 397.
- 7-Methoxy-2:4-diphenylbenzopyrylium salts (KEHRMANN and RIEDER), A., 732.
- 8-Methoxy- α -diphenyl-4 α -butene, γ -bromo- γ -nitro- α -cyano-, and γ -nitro- α -cyano- (NEBER and PAESCHKE), A., 1120.
- β -Methoxy- α - β -diphenylethane, α -bromo-, and α -chloro- (JACKSON), A., 1023.
- 3:3'-Methoxydiphenylethylene, 2:4-dinitro- and 2:4:6-trinitro-4'-hydroxy- (PASTAR), A., 392.
- 4'-Methoxydistyryl ketones, amino-, acetyl derivatives, perchlorate (DILTHEY and BERRER), A., 728.
- 3-Methoxy-2-ethoxybenzyl alcohol, 5-bromo- and 5-nitro- (RUBENSTEIN), A., 518.
- 3-Methoxy-2-ethoxycinnamic acid, and 5-nitro- (RUBENSTEIN), A., 518.
- 4-Methoxy-5-ethoxy-2-methylacetophenone, and its derivatives (v. BRUCHHAUSEN and SAWAY), A., 185.
- 4-Methoxy-5-ethoxy-2-methylbenzoylformic acid, and its methyl ester (v. BRUCHHAUSEN and SAWAY), A., 185.
- 3-Methoxy-2-ethoxyphenanthraquinone (ALLAN and ROBINSON), A., 397.
- Methoxyethoxyphenyl-4:5-thiotriazopyrocatechol methyl ethyl ether, 6-nitro- (ALLAN and ROBINSON), A., 397.
- 4-Methoxy-3-ethoxyphthalic acid, and its derivatives (SPÄTH and BURGER), A., 964.
- 4-Methoxy-5-ethoxyphthalic acid. See *Nor-m*-hemipinic acid methyl ethyl ether.
- 5-Methoxy-4-ethoxy-*o*-toluic acid (v. BRUCHHAUSEN and SAWAY), A., 185.
- p*-N- β -Methoxyethylaminobenzoic acid, β -diethylaminoethyl and β -piperidinoethyl esters (FARW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 107.
- Methoxyethylarsinic acid (ÉTAB. POULENC FRÈRES and OECHELIN), (P.), B., 965.
- 4-Methoxy-1-ethyl-2-*p*-methoxystyrylquinolinium iodide (TRÖGER and DUNKER), A., 526.
- 4'-Methoxyflavone, 7-hydroxy-, and its acetyl derivative (ROBINSON and VENKATARAMAN), A., 1149.
- 3:7-dihydroxy- (*resokaempferide*) (HEAR and ROBINSON), A., 1149.
- Methoxyflavylum chloride, 7(or 5):3':4':5'-tetrahydroxy-, and 5:7:3':4':5'-penta-hydroxy- (GATEWOOD and ROBINSON), A., 1043.
- 3-Methoxyflavylum salts, 7:4'-dihydroxy- (ROBERTSON and ROBINSON), A., 956.
- 3-Methoxyflavylum chloride, 3:5:7:4'-tetrahydroxy- (KATAOKA), A., 1150.
- 3-Methoxy-5-cyclohexanespirocyclopentene-1:4-dione (HASSELL and INGOLD), A., 954.
- 2-Methoxycyclohexanone, and its derivatives (BERGMANN and GIERTH), A., 728.
- 1-Methoxy-4¹-cyclohexene oxide, and its iodine-potassium iodide compound (BERGMANN and GIERTH), A., 728.
- 2-Methoxycyclohexyl iodide (BEDOS), A., 1238.
- 8:4-Methoxycyclohexyl-*n*-butane (FAILLEBIN), A., 50.
- 8-Methoxycyclohexylbutan- β -ols, and their salts (FAILLEBIN), A., 50.
- 5-Methoxyhydantoinanilide (BILTZ and LACHMANN), A., 1046.
- 5-Methoxyhydrindene, 4:6-dinitro- (BORSCHKE and BODENSTEIN), A., 1133.
- p*-Methoxyhydrobenzoin, formation of, from *s*-phenylanisyl glycol (OREKHOV and TIFFENEAU), A., 172.
- 2-Methoxy-2-*o*-hydroxystyryl-3-methylchromene (LÖWENSTEIN and KATZ), A., 956.
- Methoxyhydroxystyryl methyl ketones, and their acetyl derivatives (MCGOOKIN and SINCLAIR), A., 838.
- Methoxyindole-2-carboxylic-3-propionic acid, 4:6-diiodo-, and its diethyl ester (KALB, SCHWEIZER, ZELLNER, and BERTHOLD), A., 1152.
- β -Methoxy- α -iodomercuri- β -phenylpropionic acid, *l*-menthyl ester (SANDBORN and MARVEL), A., 747.
- 6-Methoxy-4-keto-1:2:3:4-tetrahydroquinoline, and its toluene-*p*-sulphonyl derivative (CLEMO and PERKIN), A., 76.
- Methoxyl groups, determination of, by Zeisel's method (NIERENSTEIN), A., 1049.
- 4-Methoxy-2-methoxystyrylquinolines, and their salts (TRÖGER and DUNKER), A., 526.
- o*-Methoxy-*p*-methylacetophenone (DILTHEY, FRÖDE, and KOENEN), A., 1254.
- 4-Methoxy-3-methyl- α - and - β -benzaldoximes, and the acetyl derivative of the α -form (BRADY, COSSON, and ROPER), A., 69.
- 4-Methoxy-3-methylbenzoic acid, and its nitrile (BRADY, COSSON, and ROPER), A., 69.
- 6-Methoxy-1-methylcarbostyryl-4-carboxylic acid, ethyl ester, (SAHASHI), A., 846.
- α -Methoxymethyl- $\gamma\gamma$ -dithoxyacetoacetic acid, ethyl ester (RUGELEY and JOHNSON), A., 117.
- 7-Methoxy-2-methyl-3:4-dihydroisoquinolinium perchlorate, 6-hydroxy- (AKABORI), A., 957.
- 1-Methoxymethyl-3:7-dimethylxanthine (FARB. v. BAYER & Co.), (P.), B., 216.
- 6-Methoxy-4:5-methylenedioxyethylbenzofuran, 3-bromo- (DELÉPINE and LONGUET), A., 1036.
- 8-Methoxy-2- β -*mp*-methylenedioxyphenylethylquinoline, and its chloroplatinate (TRÖGER and KESTENBACH), A., 1258.
- 8-Methoxy-2-*mp*-methylenedioxyethylquinoline, and its chloroplatinate (TRÖGER and KESTENBACH), A., 1258.
- 5-Methoxymethyl-5-ethylbarbituric acid (HILL and KEACH), A., 271.
- Methoxymethyl-ethylmalonic acid, ethyl ester (HILL and KEACH), A., 271.
- 5-Methoxy-3-methyl-4-ethylpyrazole (BACKER and MEIJER), A., 741.
- 4'-Methoxy-2-methylisoflavone, 5:7-dihydroxy-, and its diacetyl derivative (BAKER and ROBINSON), A., 1253.
- 3-Methoxy-5-methylflavylum salts, 7:4'-dihydroxy- (ROBERTSON and ROBINSON), A., 956.
- 5-Methoxy-1-methylhydantoin (BILTZ and KLEIN), A., 182.
- 5-Methoxy-1-methylisatin (SAHASHI), A., 846.
- Methoxymethylmethyl-diethylammonium iodide (STEWART and ASTON), A., 824.
- 2-Methoxy-1-methyl-4¹-cyclopentan-3-one semicarbazone (ROJAHN and RÜHL), A., 617.
- 2-Methoxy-1-methyl-4¹-cyclopenten-3-one, and its derivatives (ROJAHN and RÜHL), A., 617.
- 5-Methoxy-3-methylpyrazole, and 4-nitro- (BACKER and MEIJER), A., 741.
- 4-Methoxy-2-methylquinoline, condensation of, with aromatic aldehydes (TRÖGER and DUNKER), A., 525.
- 4-Methoxy-6-methylquinoline (CLEMO and PERKIN), A., 76.
- 8-Methoxy-2-methylquinoline chloroaurate (TRÖGER and GERO), A., 1045.
- 4-Methoxy-2-methylquinoline-3-carboxylic acid oxide (OVERMYER), A., 415.
- 8-Methoxy-2-methylquinoline-3-carboxylic acid, and its ethyl ester, and their derivatives (TRÖGER and DUNKER), A., 68.
- 8-Methoxy-2-methyl-1:2:3:4-tetrahydroquinoline, benzoyl derivative (TRÖGER and PAPE), A., 1258.
- 8-Methoxy-3- β -naphthalenesulphonyl-2-*mp*-methylenedioxyethylquinoline (TRÖGER and PAPE), A., 1258.
- 8-Methoxy-3- β -naphthalenesulphonyl-2-methylquinoline, and its salts (TRÖGER and PAPE), A., 1258.
- 8-Methoxy-3- β -naphthalenesulphonyl-2-styrylquinoline (TRÖGER and PAPE), A., 1258.
- 2-Methoxy-6-naphthoic acid, and its derivatives (FRIES and SCHIMMELSCHMIDT), A., 294.
- 3-Methoxy- α -naphthoic acid (LESSER and GAD), A., 168.
- 2-Methoxy-3-naphthoyl chloride (FRIES and SCHIMMELSCHMIDT), A., 294.

- 9-Methoxy-1:3:10-naphthtriazine, 2:4-dihydroxy-, and its salts and benzoyl derivative (TRÖGER and GERO), A., 1045.
- 2-Methoxy-6-naphthyl methyl ketone (FRIES and SCHIMMEL-SCHMIDT), A., 294.
- 2-Methoxynaphthyl methyl ketones, benzylidene derivatives (FRIES and SCHIMMEL-SCHMIDT), A., 294.
- 2-Methoxy-1:6:8-trinitronaphthalene (VAN DER KAM), A., 1029.
- 3-Methoxy-4-oximino-5-cyclohexanepiropyclopentene-1:4-dione (HASSELL and INGOLD), A., 954.
- 4'-Methoxy-4:5-phenazino-2-phenyliminazole (SIRCAR and DE), A., 417.
- 8-Methoxy-3-*o*-phenetolesulphonyl-2-*mp*-methylenedioxystrylquinoline (TRÖGER and KESTENBACH), A., 1258.
- 8-Methoxy-3-*p*-phenetolesulphonyl-2-*mp*-methylenedioxystrylquinoline (TRÖGER and PAPE), A., 1258.
- 8-Methoxy-3-*o*-phenetolesulphonyl-2-methylquinoline (TRÖGER and KESTENBACH), A., 1258.
- 8-Methoxy-3-*p*-phenetolesulphonyl-2-methylquinoline, and its salts (TRÖGER and PAPE), A., 1258.
- 8-Methoxy-3-*o*-phenetolesulphonyl-2- Δ^6 -propenylquinoline (TRÖGER and KESTENBACH), A., 1258.
- 8-Methoxy-3-*o*-phenetolesulphonyl-2-strylquinoline (TRÖGER and KESTENBACH), A., 1258.
- 8-Methoxy-3-*p*-phenetolesulphonyl-2-strylquinoline (TRÖGER and PAPE), A., 1258.
- 8-Methoxy-3-*p*-phenetolsulphonylquinoline, 2-amino- (TRÖGER and FROMM), A., 69.
- 3-Methoxyphenol, 2:4:6-trinitro- (SCHLUBACH and Mergen-Thaler), A., 284.
- 4-Methoxyphenol, 2- and 3-nitro-, preparation of, and their derivatives (ROBINSON and SMITH), A., 397.
- 6-Methoxy-2-phenyl-4- β -aminoethylquinoline (JOHN), A., 846.
- 4-Methoxyphenyl *n*-amyl ketone, 2-hydroxy- (TWISS), A., 1041.
- 3-Methoxyphenylanisylidiveratrocypyrine, and its acetate (BRADLEY and ROBINSON), A., 1145.
- 4-Methoxyphenylarsinic acid, 3:5-dinitro- (DE LANGE), A., 279.
- 2-*m*-Methoxyphenylbenzthiazole 2-*p*-hydroxy- (BOGERT and STULL), A., 183.
- 8-Methoxyphenylbutan- β -ols, and their salts, and hydroxy- (FAILLEBIN), A., 50.
- 6-Methoxy-5-phenyl-3-*p*-chlorophenyl-1:2-oxazine, 4-hydroxy- (KÖHLER and SHOHAN), A., 1140.
- 2:4'(P3')-Methoxyphenyldecahydronaphthalene (GYSIN), A., 389.
- 7-Methoxy-4-phenyl-2-*p*-dimethylaminostyryl-3-methylbenzopyrylium salts (HEILBRON and ZAKI), A., 1042.
- 7-Methoxy-4-phenyl-2:3-dimethylbenzopyrylium salts (HEILBRON and ZAKI), A., 1042.
- 2-*o*-Methoxyphenyl-4:6-diphenylpyrylium perchlorate (DILTHEY, FRÖDE, and KOENEN), A., 1254.
- 3-Methoxyphenylethyl *n*-heptyl ketone, 4-hydroxy-, and its derivatives (NOMURA and TSURUMI), A., 1145.
- 3-Methoxyphenylethyl *n*-hexyl ketone, 4-hydroxy-, and its derivatives (NOMURA and TSURUMI), A., 1145.
- β -*o*-Methoxyphenylethyl methyl ketone (FAILLEBIN), A., 50.
- 3-Methoxyphenylethyl *n*-octyl ketone, 4-hydroxy-, and its derivatives (NOMURA and TSURUMI), A., 1145.
- 5-Methoxy-2-phenylglyoxaline (GRÄNACHER, SCHELLING, and SCHLATTER), A., 78.
- β -3-Methoxyphenylhydroxylamine, 4:6-dinitro-, and its derivatives (BORSCHKE and FESKE), A., 605.
- 7-Methoxy-4-phenyl-2-*p*-hydroxy-*m*-methoxystyryl-3-methylbenzopyrylium salts (HEILBRON and ZAKI), A., 1042.
- 6-Methoxy-2-phenyl-4- β -dihydroxyisopropylquinoline, and its salts (JOHN and FISCHL), A., 622.
- 7-Methoxy-4-phenyl-2-*p*-hydroxystyryl-3-methylbenzopyrylium salts (HEILBRON and ZAKI), A., 1042.
- p*-Methoxyphenyl β -hydroxyvinyl ketone, and its derivatives (BENARY, MEYER, and CHARISUIS), A., 273.
- 7-Methoxy-4-phenyl-2-*p*-methoxystyryl-3-methylbenzopyrylium salts (HEILBRON and ZAKI), A., 1042.
- 7-Methoxy-4-phenyl-2-methylbenzopyrylium salts (KEHRMANN and RIEDER), A., 732.
- 2-Methoxyphenylmethylsulphones, nitro- (HOLMES and C. K. and E. H. INGOLD), A., 947.
- 2-Methoxyphenylmethylsulphoxide, 4-nitro- (HOLMES and C. K. and E. H. INGOLD), A., 947.
- 5-*p*-Methoxyphenyl-2-methyl-1:2:4-triazole, 3-hydroxy- (BACKER and MULDER), A., 182.
- α -*p*-Methoxyphenyl- β -phenylethylamine hydrochloride (TORRES Y GONZALES), A., 610.
- 6-Methoxy-2-phenyl-4- Δ^6 -propenylquinoline, and its salts (JOHN and FISCHL), A., 622.
- β -Methoxy- β -phenylpropionic acid, α -chloro-, and its methyl ester (JACKSON), A., 1023.
- β -Methoxy- β -phenylpropionophenone, α -chloro- (JACKSON), A., 1023.
- 8-Methoxyphenylquinolines, and 2-amino-, and their salts, and 2-hydroxy- (TRÖGER and GERO), A., 1045.
- β -6-Methoxy-2-phenyl-4-quinolylacrylic acid, and its salts and methyl ester (JOHN and GROSSMANN), A., 179.
- β -6-Methoxy-2-phenyl-4-quinolylethylamine, and its salts (JOHN and GROSSMANN), A., 180.
- α -6-Methoxy-2-phenyl-4-quinolylpropan- β -ol, $\gamma\gamma\gamma$ -trichloro- (JOHN and GROSSMANN), A., 179.
- β -6-Methoxy-2-phenyl-4-quinolylpropionic acid, derivatives of (JOHN and GROSSMANN), A., 180.
- p*-Methoxyphenyl styryl ketone, *p*-amino-, acetyl derivative (DILTHEY and BERRES), A., 177.
- 6-Methoxy-2-phenyl-4-strylquinoline, and its salts (JOHN and FISCHL), A., 622.
- 1-Methoxyphenyl-4-telluritrichloride, 2-hydroxy- (MORGAN and DREW), A., 83.
- 8-Methoxyphenyl-1:2:3:4-tetrahydroquinolines, and their benzoyl derivatives (TRÖGER and GERO), A., 1045.
- α -(3-Methoxyphenyl)-4:8-undecen- γ -one, α -4-hydroxy- (NOMURA and TSURUMI), A., 1145.
- 4(or 2)-Methoxyisophthalic acid, 2(or 4)-hydroxy-, methyl ester (HEMMELMAYR and MEYER), A., 404.
- 1(-)- α -Methoxypropionic acid, silver salt (FREUDENBERG and WOLF), A., 602.
- ω - α -Methoxypropoxyacetoveratrones (FREUDENBERG and WOLF), A., 602.
- 2-Methoxy-4-*n*-propyl-6-allylphenol, and its phenylurethane (CLAISEN and TIETZE), A., 1035.
- α -(3-Methoxy-5-*n*-propylphenyl)- β -methyl- Δ^6 -pentadiene, 2-hydroxy-, and its derivatives (CLAISEN and TIETZE), A., 1035.
- 2-Methoxy-4-*n*-propyl-6-*n*-propenylphenol, and its derivatives (CLAISEN and TIETZE), A., 1035.
- 2-Methoxy-4:6-pyrone-3:5-dicarboxylic acid, methyl ester and derivatives of, and their metallic salts (SCIROETER and FINCK), A., 731.
- 8-Methoxyquinoline, 3-cyano-2-hydroxy- (TRÖGER and GERO), A., 1045.
- 8-Methoxyquinoline-3-carboxylic acid, 2-hydroxy-, and its disilver salt (TRÖGER and GERO), A., 1045.
- 4-Methoxysalicylic acid, 5-bromo-, and its esters (FRIES and SAFTIEN), A., 849.
- p*-Methoxystilbene, and its dibromide (ORÉKHOV and TIFFENEAU), A., 172.
- p*-Methoxystyrene, 3-bromo- (REIMER), A., 1139.
- 4'-Methoxy-2-strylisoquinoline, 5:7-dihydroxy-, and its diacetyl derivative (BAKER and ROBINSON), A., 1253.
- p*-Methoxystyryl glyoxylic acid, and β -bromo-, and $\beta\beta$ -dibromo-, and their esters (REIMER), A., 1139.
- 3-Methoxystyryl *n*-heptyl ketone, 4-hydroxy-, and its benzoyl derivative (NOMURA and TSURUMI), A., 1145.
- 3-Methoxystyryl *n*-hexyl ketone, 4-hydroxy- (NOMURA and TSURUMI), A., 1145.
- 3-Methoxystyryl *n*-octyl ketone, 4-hydroxy-, and its benzoyl derivative (NOMURA and TSURUMI), A., 1145.
- 4-Methoxy-2-strylquinoline (TRÖGER and DUNKER), A., 526.
- Methoxy-9-strylxanthylum salts, and their hydroxy-derivatives (ATKINSON and HEILBRON), A., 620.
- 5-Methoxythioanisoles, 2- and 4-nitro- (HODGSON and HANDLEY), A., 516.
- p*-Methoxytolane, and its dibromide (ORÉKHOV and TIFFENEAU), A., 172.
- 3-Methoxytoluene, 2:4-dinitro- (GORNALL and ROBINSON), A., 1029; (ROBINSON and WEST), A., 1045.
- 8-Methoxy-3-*p*-toluenesulphonyl-2-*mp*-methylenedioxystrylquinoline (TRÖGER and PAPE), A., 1258.
- 8-Methoxy-3-*p*-toluenesulphonyl-2-methylquinoline, and its salts (TRÖGER and PAPE), A., 1258.
- 8-Methoxy-3-*p*-toluenesulphonylquinoline, 2-amino- (TRÖGER and FROMM), A., 69.
- 8-Methoxy-3-*p*-toluenesulphonyl-2-strylquinoline (TRÖGER and PAPE), A., 1258.
- 3-Methoxy-*p*-toluidine, 2-nitro-, and its hydrochloride (ROBINSON and SHINODA), A., 1048.
- 3-Methoxy-*o*-toluidines, 3- and 6-chloro-, and their acetyl derivatives (GIBSON), A., 832.

- Methoxytolyltelluritrichloride (MORGAN and KELLETT), A., 747.
- 7-Methoxy-2:3:4-trimethylbenzopyrylium chloroaurate (KEHRMANN and RIEDER), A., 732.
- 6-Methoxy-3:4:6-triphenyl-1:2(6)-oxazine, 5-hydroxy-, and its derivatives (KOHLEH), A., 530.
- β -Methoxyisovaleric acid (FARMER and KRACOVSKI), A., 1124.
- Methyl alcohol, preparation of (GOLDSCHMIDT, WEBER, and ERASMUS), (P.), B., 109*.
- catalytically (CASALE), (P.), B., 692.
- thermodynamics of synthesis of (KELLEY), B., 214.
- manufacture of (PATART), (P.), B., 812.
- by synthesis (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 218*.
- alcohol, manufacture of, from methane (BAKELITE GES. and HESSEN), (P.), B., 565.
- from methyl chloride (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 610.
- purification of, obtained from carbon oxides and hydrogen (I. G. FARBENIND.), (P.), B., 901.
- density and refractive index of mixtures of benzene, water, and (BARBAUDY), A., 671.
- conductivity measurements in mixtures of ethyl alcohol and (GOLDSCHMIDT and AARFLOT), A., 477.
- heat of fusion of (MITSUKURI and HARA), A., 785.
- anhydrous, viscosity and density of, and of its solutions of sodium and potassium halides (EWART and RAIKES), A., 1000.
- viscosity of solutions in (GOLDSCHMIDT and AARFLOT), A., 1005.
- equilibrium between methyl formate and (CHRISTIANSEN), A., 358.
- photochemical oxidation of, in presence of potassium dichromate (SCHWARZ), A., 253.
- condensation of, in presence of contact substances (TROPSCH and PHILIPPOVICH), B., 897.
- catalytic dehydration of (HOWARD), A., 918.
- catalytic action of Japanese acid earth on aniline and (INOUE), A., 1132.
- action of phenol on, at high temperatures (IPATIEV, ORLOV, and RAZUBAIEV), A., 281.
- use of, as a solvent for the mutarotation of tetramethylglucose (FAULKNER and LOWRY), A., 1026.
- naphthyl urethano from (BICKEL and FRENCH), A., 517.
- in grapes and their fermentation products (VLAR), B., 562.
- sensitiveness of reagents for (OLSZEWSKI), B., 849.
- toxicity, detection, and determination of (REIF), B., 642.
- detection of, in alcoholic beverages (GEORGIA and MORALES), B., 381.
- determination of water in (RISING and HICKS), A., 967.
- Methyl butyl ethers, chloro- (HILL and KEACH), A., 271.
- chloride (*chloromethane*), preparation of, from methyl sulphide (CHEM. FABR. SCHERING), (P.), B., 173.
- latent heat of vaporisation of (YATES), A., 1087.
- production of solutions of (HOLZVERKÖHLUNGS-IND.), (P.), B., 610.
- γ -chloro- β -hydroxypropyl ether (BLANCHARD), A., 1123.
- dichloroisopropyl ether, chloro- (BLANCHARD), A., 1023.
- diethylaminomethyl ether (STEWART and ASTON), A., 824.
- ether, action of hydrogen chloride with (SHIDEI), A., 24.
- mono*- and *di*-chloro-, action of nitric and sulphuric acids on (HOUBEN and PFANKUCH), A., 268.
- ethyl sulphide mercurichloride (THIERRY), B., 116.
- hypobromite and hypochlorite, addition of, to ethylene derivatives (JACKSON), A., 1023.
- iodide, preparation of, from methyl *p*-toluenesulphonate (PEACOCK and MENON), A., 381.
- methylfructoside (ALLPRESS), A., 942.
- sulphate, action of magnesium benzhydryl chloride with (GILMAN and KIRBY), A., 944.
- sulphide, crude, improvement of odour of (CHEM. FABR. SCHERING), (P.), B., 173.
- conversion of, into carbon tetrachloride and other chloro-compounds (CHEM. FABR. SCHERING and HALLSTEIN), (P.), B., 28.
- conversion of, into chlorine compounds (CHEM. FABR. SCHERING), (P.), B., 173.
- detection of, in peppermint oil (FIGDOR), B., 383.
- N-Methylaceto-*o*-anisidide, and its nitro-derivatives (C. K. and E. H. INGOLD), A., 833.
- 3-Methylacetophenone, 2-hydroxy-, semicarbazone (v. AUWERS, BUNDESMANN, and WIENERS), A., 609.
- Methylacetoveratrone. See 3:4-Dimethoxy-2-methylacetophenone.
- 9-Methylacridine, condensation of, with formaldehyde (HOMBERGER and JENSEN), A., 526.
- β -Methyladipic- β -acetic acid (FARMER and ROSS), A., 67.
- d*(-)- β -Methyladiponitrile (v. BRAUN and JOSTES), A., 825.
- Methylal, manufacture of resins from phenols and (CARTER, COXE, and KARPEN & BROS.), (P.), B., 202.
- Methylals, manufacture of (KARPEN & BROS.), (P.), B., 217, 386*.
- Methylalanylalanine (LEVENE, SIMMS, and PFALTZ), A., 1265.
- Methylalanylglycine (LEVENE, SIMMS, and PFALTZ), A., 1265.
- Methylalanylglycylglycine (LEVENE, SIMMS, and PFALTZ), A., 1265.
- Methylalanylsarcosine anhydride (LEVENE, SIMMS, and PFALTZ), A., 1265.
- Methylalkylglycerols, action of formic acid on (DELABY and MOREL), A., 498.
- N- ω -Methylallophanic acid, esters of (MERCK and DIEHL), (P.), B., 931.
- N-Methyl-8-allyloxytetrahydroquinoline sulphate, and its mercury compound (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 218.
- o*- α -Methylallylphenol, and its phenylcarbamate (CLAISEN and TIETZE), A., 1242.
- Methylamides, preparation of (BRADY and DUNN), A., 1142.
- Methylamine, interaction of formaldehyde, acetone, and (MANNICH and BALL), A., 522.
- α -naphthylcarbamide from (FRENCH and WIRTEL), A., 830.
- Methylaminoacetic acid, cyano-, ethyl ester (SCHEIBLER and NEEF), A., 942.
- Methylaminoacetopyrocatechol dibenzyl ether, preparation of (MERCK, DÜTZMANN, and KRAUSS), (P.), B., 772.
- 2-Methyl-1- ϵ -aminoamylpiperidine, and its salts and derivatives (v. BRAUN and ZOBEL), A., 1150.
- 4-Methylaminobenzaldehyde, 3:5-dinitro- (DE LANGE), A., 278.
- 1-Methylaminobenzthiazole, and its bromides (HUNTER), A., 849.
- γ -Methylaminobutaldehyde, and its chloroaurate (MANNICH and HORKHEIMER), A., 504.
- α -Methylaminoisobutyronitrile (BRUYLANTS), A., 826.
- and its hydrochloride (BILTZ and SLOTTA), A., 1046.
- 4-Methylaminodiphenyl, and its derivatives (BELL, KENYON, and ROBINSON), A., 830.
- Methylaminodiphenyl, dinitro-, and dinitro-4-nitroso- (BELL and KENYON), A., 1241.
- 2'-Methylaminodiphenylarsinic acid, 2-bromo- (BURTON and GIBSON), A., 418.
- 4'-Methyl-2-aminodiphenylsulphone (FARBW. VORM. BAYER & Co.), (P.), B., 735.
- 4'-Methylaminodiphenylsulphonesulphonic acids, and their derivatives (FARBW. VORM. BAYER & Co.), (P.), B., 734.
- Methylamino- β -*p*-hydroxyphenylpropionic acid, α -cyano-, ethyl ester (SCHEIBLER and NEEF), A., 943.
- 2-Methylamino-1:6:8-*trinitro*naphthalene (VAN DER KAM), A., 1240.
- β -Methylamino- α -*p*-nitrophenylpropionic acid, and its hydrochloride and phenylacetyl derivative (MANNICH and STEIN), A., 166.
- 2-Methylamino-oxazoline, and its benzoyl derivative (FROMM), A., 716.
- N-Methyl-*o*-aminophenol, *ON*-diacetyl derivative (C. K. and E. H. INGOLD), A., 833.
- N-*p*-toluenesulphonyl derivative (HEWITT, KING, and MURCH), A., 851.
- 4-Methylaminophenylarsinic acid, and its toluenesulphonyl derivative, and its amino- and nitro-derivatives (HEWITT, KING, and MURCH), A., 851.
- γ -Methylamino- α -phenyl-*n*-propyl methyl ether, and its hydrochloride (DULIERE), A., 723.
- Methylaminopropionic acid, α -cyano-, ethyl ester (SCHEIBLER and NEEF), A., 942.
- 4-Methylaminopyridine-2:6-dicarboxylmethylamide (KOENIGS, FRIEDRICH, and JURANY), A., 179.
- 4-Methyl-5-isoamylcyclohexanone, and its semicarbazone (RUZICKA and PFEIFFER), A., 1149.
- Methyl amyl ketone, bromo-, and its semicarbazone (GRIGNARD and PERRICHON), A., 382.

- γ -Methyl- β -isoamyld- α -pentene- α -dicarboxylic acid, ethyl ester (RUZICKA and PFEIFFER), A., 1148.
- γ -Methyl- β - and - δ -isoamylpimelic acids, esters of (RUZICKA and PFEIFFER), A., 1148.
- N*-Methylauhdrosinomenium base (GOTO), A., 1160.
- Methylaniline ethyl sulphate (POPELLER), A., 1123.
- methosulphate (KÜSTER, ERLE, v. ROLL, and SCHILLER), A., 822.
- Methylaniline, *p*-nitroso-, dinitrone from ethyl phenylpropionate and (ALESSANDRI), A., 1038.
- 5-Methylanilino-2-trichlorophenoxybenzoquinone, 6-chloro- (HUNTER and MORSE), A., 839.
- 4'-Methylanilindiphenyl, 4-bromo-, and 4-chloro-2:3-dinitro- (LE FÈVRE and TURNER), A., 1029.
- 2-Methylanilino-1:6:8-trinitronaphthalene (VAN DER KAM), A., 1240.
- 4-Methylanilino-2-phenyl-6-methylpyrimidine, salts of (FORSYTH and PYMAN), A., 1156.
- 3-*p*-Methylanilo-2-keto-2:3-dihydropyriminazole (REINDEL and ROSENDAHL), A., 743.
- N*-Methylanisaldoxime, derivatives of (BRADY, DUNN, and GOLDSTEIN), A., 1142.
- N*-Methyl- α -anisidines, nitro- (C. K. and E. H. INGOLD), A., 833.
- 9-Methylanthracene, 10-bromo-, 9:10-dibromo-, 10-bromo-9-hydroxy-, and their salts and derivatives (BARNETT and MATTHEWS), A., 1030.
- Methylantranilic acid, esters of, and their hydrochlorides (KELLER and SCHULZE), A., 63.
- 9-Methylantranilic acetate (BARNETT and MATTHEWS), A., 618.
- 2-Methyl- α -anthrapyridine, and its salts (LINDNER and STAUFER), A., 410.
- 2-Methylantraquinone, sulphurisation and oxidation products of (SCHAARSCHMIDT and LEWYEFF), B., 625.
- derivatives of (EDER and MANOUKIAN), A., 407.
- 2-Methylantraquinone, ω -bromo-1:8-dinitro- (EDER and MANOUKIAN), A., 839.
- 1:5- and 1:8-dinitro-, action of sulphite on (EDER and MANOUKIAN), A., 839.
- 3-Methylantraquinone, amino- and nitro-hydroxy-derivatives (EDER and MANOUKIAN), A., 407.
- 1-Methylantraquinone, reduction of, with zinc dust (v. BRAUN and BAYER), A., 729.
- 1-Methylantrone (v. BRAUN and BAYER), A., 729.
- 9-Methylantrone (BARNETT and MATTHEWS), A., 618.
- dl*- α -Methylarginine, and its derivatives (STEIB), A., 824.
- Methylarsinic acid, salts, preparation of (TAVERNARI), B., 106.
- β -[2-Methyl-5-arsinophenylamino]ethyl alcohol (ABBOTT LABORATORIES), B., 851.
- 2-Methyl-5-arsinophenylcarbamic acid, β -chloroethyl ester (ABBOTT LABORATORIES), (P.), B., 851.
- Methylation in the organism (NOVELLO, HARROW, and SHERWIN), A., 1171.
- N*-Methylbenzaldoxime, derivatives of (BRADY, DUNN, and GOLDSTEIN), A., 1142.
- 4-Methylbenzaldoximes, 3-nitro-, and their derivatives (BRADY, COSSON, and ROPER), A., 69.
- 2-Methyl-1- ϵ -benzamidoamylpiperidine (v. BRAUN and ZOBEL), A., 1150.
- 5'-Methylbenzanthrone, 4:4'-diamino- (CASSELLA & Co.), (P.), B., 434.
- Methylbenzenes, oxidation of (STEPHENS), A., 1028.
- 2-Methylbenzeneazo- α -naphthaleneazoresorcinol, 4-nitro- (TRÖGER and SCHAEFER), A., 1032.
- 2-Methylbenzeneazo- α -naphthalenediazonium chlorides, nitro- (TRÖGER and SCHAEFER), A., 1032.
- 2-Methylbenzeneazo- α -naphthalenediazosulphonic acid, 5-nitro-, sodium salt (TRÖGER and SCHAEFER), A., 1032.
- 2-Methylbenzeneazo- α -naphthalene- β -naphthol, 4-nitro- (TRÖGER and SCHAEFER), A., 1032.
- 2-Methylbenzeneazo- α -naphthylamines, nitro- (TRÖGER and SCHAEFER), A., 1032.
- 2-Methylbenzeneazo- α -naphthylhydrazinesulphonic acid, 4- and 5-nitro- (TRÖGER and SCHAEFER), A., 1032.
- μ -Methylbenziminazole, and its hydrochloride (GUHA and DE), A., 743.
- Methylbenzoic acid. See Toluic acid.
- 3-Methyl-4:5-benzodiazole (FRIES and SCHMIELSCHMIDT), A., 294.
- Methylspiro-2:2'-benzonaphthadipyran (DILTHEY, BERRES, HÖLTERHOFF, and WÜBKEN), A., 1255.
- 2-Methylbezuphenanthrazine, 1:3-dichloro- and 1:3:4-trichloro- (DAVIES and LEEPER), A., 827.
- 2-Methylbenzo-1:4-pyrone, 3:6-dichloro- (WITTIG, BANGERT, and RICHTER), A., 301.
- 1-Methylbenzoxazole methiodide and methoperchlorate (CLARK), A., 309.
- 2-Methylbenzisoaxazole, 4-nitro- (MEISENHEIMER, ZIMMERMANN, and v. KUMMER), A., 406.
- 3'-Methylbenzoylbenzoic acid, 3:4:5:6-tetrachloro-2'-hydroxy-, salts and derivatives of (ORNDORFF and SCHADE), A., 519.
- p*-Methylbenzoylformhydroxamic acid phenylhydrazone (GASTALDI and PRINCIVALLE), A., 1261.
- p*-Methylbenzoylformhydroxamic acids, and their triacetyl derivatives (BAJARDO), A., 1262.
- Methylbenzimidazoles, 1-amino-, and their bromides (HUNTER), A., 850.
- 7-Methylbenztriazole, 5-bromo-6-nitro-1-hydroxy- (BORSCHKE and TRAUTNER), A., 391.
- m*-Methylbenzyl alcohol, naphthylurethane from (BICKEL and FRENCH), A., 517.
- o*- and *p*-Methylbenzylbenzenesulphonamides (CAROTHERS and JONES), A., 162.
- p*-Methylbenzyl-*n*-butyramide (CAROTHERS and JONES), A., 161.
- 1-*p*-Methylbenzyl-2:6-di(hydroxymethyl)piperidine (v. BRAUN and LEISTNER), A., 1255.
- 4-Methylbenzylidene diacetate, 3:5-dinitro- (PFAU), A., 837.
- 1-*p*-Methylbenzylmorphopyrrolidine, and its salts (v. BRAUN and LEISTNER), A., 1255.
- 1-*p*-Methylbenzylmorphopiperidine, and its salts (v. BRAUN and LEISTNER), A., 1255.
- 1-*p*-Methylbenzylpiperidine-2:6-dicarboxylic acid, ethyl ester (v. BRAUN and LEISTNER), A., 1255.
- 1-*p*-Methylbenzylpyrrolidine-2:2-dicarboxylic acid, derivatives of (v. BRAUN and LEISTNER), A., 1255.
- 1-*p*-Methylbenzylpyrrolidine-2:5-dicarboxylic acid, and its ethyl ester (v. BRAUN and LEISTNER), A., 1255.
- o*- and *p*-Methylbenzyl-*p*-toluenesulphonamides (CAROTHERS and JONES), A., 162.
- Methylbetaine. See Trimethylcarbomethoxymethylammonium bromide.
- Methyl- β -bromoallylamine, and its salts (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- Methyl- β -bromoallyl- γ -bromoallylamine, and its salts (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- Methyl- β -bromoallycyanamide (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- α -Methyl-*n*-butaldehyde, action of bacteria on (NEUBERG and SIMON), A., 1062.
- d*(+)- β -Methylbutane, $\alpha\delta$ -di-amino-, -bromo-, and -chloro- (v. BRAUN and JOSTES), A., 825.
- β -Methylbutane- $\beta\gamma$ -diol, preparation of, and its influence on conductivity of boric acid (BÖSEKEN), A., 910.
- γ -Methylbutan- β -ol, α -hydroxylamino-, oxalate (SCHMIDT, ASCHERL, and MAYER), A., 45.
- β -Methyl- $\delta\beta$ -butene dibromide, action of sodium acetate on (KRASSOVSKY and SCHENDEROVITCH), A., 1022.
- γ -Methyl- $\delta\beta$ -butene, α -amino-, preparation of, and its derivatives (SPÄTH and SPITZKY), A., 81.
- γ -Methyl- $\delta\beta$ -butenylphthalimide (SPÄTH and SPITZKY), A., 81.
- N*-Methylbutyldihydronicotine (KARRER and WIDMER), A., 627.
- 1-Methyl-2-isobutyl-1:2-dihydroquinoline, and its picrate (MEISENHEIMER, STOTZ, and BAUER), A., 76.
- 1-Methyl-3-isobutyl-4'-cyclohexen-5-one thiosemicarbazone (MAUREVITSCH), A., 521.
- 3-Methyl-5-isobutyl- Δ^2 -cyclohexenone (MACUREVITSCH), A., 170.
- γ -Methylbutylenesalicylamides (MOUCKA and RÖGL), A., 626.
- Methyl butyl ketones, ketones from condensation of mesityl oxide and, and their semicarbazones (EKELEY and CARPENTER), A., 1143.
- 2-Methyl-6-*tert*-butylpyridine (MUMM and NEUMANN), A., 958.
- 2-Methyl-6-*tert*-butylpyridinecarboxylic acids, and their ethyl esters (MUMM and NEUMANN), A., 958.
- 2-Methyl-6-*tert*-butylpyridine-3:4-dicarboxylic anhydride (MUMM and NEUMANN), A., 958.
- 1-Methyl-2-isobutyl-1:2:3:4-tetrahydroquinoline, picrate (MEISENHEIMER, STOTZ, and BAUER), A., 77.

- β -Methylbutyric acid, thallous salt (WALTER, A., 712).
- 6-Methylcamphor, and its azine, and hydrazone (NAMETKIN and BRIUSOVA), A., 619.
- Methylcarbamio acid, dimethylaminophenyl esters, and their derivatives (STEDMAN, A., 974).
- 9-Methylcarbazole, 3:6-dibromo- and 3:6-dibromo-1-nitro- (LINDEMANN and MÜHLHAUS), A., 75.
- 3:6-diiodo- (TUCKER), A., 622.
- 9-Methylcarbazole-3-phosphinous acid (CASSELLA & Co.), (P.), B., 996.
- γ -Methylcarbethoxymethylaminobutacetal (MANNICH and HORKHEIMER), A., 504.
- 3-Methylcarbonato-4:5-dimethoxybenzoic acid, and its derivatives (MAUTHNER), A., 1038.
- 1-Methylcarbostyryl-4-carboxylic acid, 6-hydroxy- (SAHASHI, A., 846).
- β -Methylcellobioside, degradation of (KARRER and TSCHAN), A., 823.
- p*-Methylchalkone. See *p*-Tolyl styryl ketone.
- Methylchloroallylamines, and their salts (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- Methylchloroallylbromoallylamines, and their salts (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- Methylchloroallylcyanamides (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- Methyl-*p*-chlorobenzaldoximes (BRADY, DUNN, and GOLDSTEIN), A., 1142.
- Methyl α -chloro- $\Delta\alpha$ -butenyl ketone semicarbazone (PASTUREAU and BADER), A., 1227.
- Methyl β -chloro- α -hydroxyisobutyl ketone (PASTUREAU and BADER), A., 1227.
- Methyltrichloromethylsulphur chloride (CHEM. FABR. SCHERING and HALLSTEIN), (P.), B., 28.
- N*-Methylcinnaldoxime, and its hydriodide (BRADY, DUNN, and GOLDSTEIN), A., 1142.
- 2-Methyl-5-(ω -cyano- ω' -carbethoxyvinyl)pyrrole-3-carboxylic acid, ethyl ester (FISCHER and SCHUBERT), A., 737.
- Methylisocytosine, silver salt (HAHN, FASOLD, and SCHÄFER), A., 275.
- Methylisocytosine-*d*-glucoside, and its tetra-acetyl derivative (HAHN, FASOLD, and SCHÄFER), A., 275.
- γ -Methyldecane- $\gamma\delta$ -diol (NICOLLE), A., 383.
- 8-Methyl-3:4'-dibenzanthronyl (BADISORF ANILIN- & SODA-FABR.), (P.), B., 781.
- Methyl-di- β -bromoallylamine, and its salts (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- 2-Methyl-5-(ω -dicarbethoxyvinyl)pyrrole-3-carboxylic acid, ethyl ester (FISCHER and SCHUBERT), A., 737.
- Methyl-dichloroallylamines, and their salts (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- 6-Methyl-1:1'-diethyl-2:2'-carbocyanine iodide (MILLS and RAPER), A., 78.
- Methyldiethylphosphine oxide (MEISENHEIMER), A., 1237.
- 3-Methyl-4:4'-diethyl-5-pyrazolone (BACKER and MEYER), A., 305.
- Methyl-7:12-dihydrobenzophenarsazines, chloro- (BURTON and GIBSON), A., 1162.
- 4-Methyl-1:2-dihydrobenzoxazolone-5-arsenoxide (CASSELLA & Co.), (P.), B., 932.
- 2-Methyl-1:2-dihydrobenzthiazole, 1-imino-, and its bromides (HUNTER), A., 849.
- Methyldihydrodeoxytetrahydro- α -methylmorphimethine, and its salts (CAHN), A., 1264.
- Methyldihydronaphthaisoquinolines, and their salts (GIBSON, HARIHARAN, MENON, and SMONSEN), A., 1154.
- 2-Methyl-5:10-dihydrophenarsazine, 10-chloro-, and its 5-acetyl derivative (BURTON and GIBSON), A., 419.
- Methyldihydrothabainonemethine, and its salts and derivatives (CAHN), A., 1264.
- N*-Methyl-3:4-dimethoxybenzaldoxime (BRADY, DUNN, and GOLDSTEIN), A., 1142.
- Methyl dimethyl-*N*-leucylproline (ABDERHALDEN and SICKEL), A., 1235.
- 3-Methylspirodi-2:2'- β -naphthapyran (LÖWENSTEIN and KATZ), A., 956.
- Methyldioxindoles (WAHL and FAIVRET), A., 960.
- Methyldiphenyls, and bromo- and chloro- (GOMBERG and PERNER), A., 944.
- s*-4'-Methyldiphenylethylene, 2:4:6-trinitro- (PASTAK), A., 392.
- 2-Methyl-3:5-diisopropylpyridine, and its salts (OPARINA), A., 844.
- 3-Methylspirodipyrans (LÖWENSTEIN and KATZ), A., 956.
- Methylene chloride (*dichloromethane*), preparation of (GOLD-SCHMIDT, WEBER, and ERASMUS), (P.), B., 109*.
- in fire extinguishers, etc. (BRODTON), (P.), B., 472.
- groups, reactivity of (SKRAUP and BÖHM), A., 722.
- iodide, action of magnesium on (EMSCHWILLER), A., 1224.
- Methyleneaminoacetic acid, salts of (SCHEIBLER and NEEF), A., 942.
- α -Methyleneamino- β -*p*-hydroxyphenylpropionic acid, sodium salt (SCHEIBLER and NEEF), A., 943.
- α -Methyleneaminopropionic acid, salts of (SCHEIBLER and NEEF), A., 943.
- Methylene-azure-A and -B (MACNEAL and KILLIAN), A., 531.
- Methylenebisiminodiacetonitrile (DELÉPINE), A., 943.
- Methylene-blue, fixation of, by dispersoids (FODOR and RIWLIN), A., 238.
- absorption of, by cotton from buffered solutions (CLIBBENS and GEAKE), B., 528.
- by proteins (FODOR and MAYER), A., 1091.
- by zinc oxide (BURNS and WOOD), B., 734.
- by yeast-phosphoprotein sols (RIWLIN), A., 1092.
- effect of iron on decolorisation of, by cysteine (TODA), A., 943.
- chromate of (MACNEAL and KILLIAN), A., 531.
- effect of concentration on determination of, spectrophotometrically (FRENCH), B., 354.
- d*-Methylenecamphor-*l*-alanine, ethyl ester (KIPPING and POPE), A., 388.
- 3:4-Methylenedioxy- α -benzaldoxime, acetyl and benzoyl derivatives (BRADY and McHUGH), A., 69.
- 3:4-Methylenedioxybenzomethylamide (BRADY and DUNN), A., 1142.
- 3:4-Methylenedioxycinnamic acid, 6-bromo-, and its methyl ester (HAWORTH, PERKIN, and STEVENS), A., 951.
- 6:7-Methylenedioxy-3-(3':4'-dimethoxybenzoyl)isoquinoline, and its derivatives (CAMPBELL, HAWORTH, and PERKIN), A., 303.
- 6:7-Methylenedioxy-3-(3':4'-dimethoxybenzoyl)-1:2:3:4-tetrahydroisoquinoline, and its salts and derivatives (CAMPBELL, HAWORTH, and PERKIN), A., 303.
- 6:7-Methylenedioxy-3-(3':4'-dimethoxybenzoyl)isoquinoline, and its picrate (CAMPBELL, HAWORTH, and PERKIN), A., 303.
- 6:7-Methylenedioxy-3-(3':4'-dimethoxybenzoyl)-1:2:3:4-tetrahydroisoquinoline, and its salts (CAMPBELL, HAWORTH, and PERKIN), A., 303.
- 2:3-Methylenedioxy-11:12-dimethoxydihydroparabarine, and its salts (CAMPBELL, HAWORTH, and PERKIN), A., 303.
- 2:3-Methylenedioxy-11:12-dimethoxy-6:15:16:17-tetrahydroparabarine, and its salts (CAMPBELL, HAWORTH, and PERKIN), A., 303.
- s*-3':4'-Methylenedioxydiphenylethylene, 2:4-dinitro- and 2:4:6-trinitro- (PASTAK), A., 392.
- 3:4-Methylenedioxyhomophthalic acid, anhydride of, and 4-bromo- (HAWORTH, PERKIN, and STEVENS), A., 952.
- 6:7-Methylenedioxy-1-hydrindone, 4-bromo-, and its derivatives (HAWORTH, PERKIN, and STEVENS), A., 952.
- 6:7-Methylenedioxy-3-(α -hydroxy-3':4'-dimethoxybenzoyl)isoquinoline, and its picrate (CAMPBELL, HAWORTH, and PERKIN), A., 303.
- 2-*m*:*p*-Methylenedioxyphenylbenzthiazole (BOGERT and STULL), A., 183.
- 8:3:4-Methylenedioxyphenylbutan- β -ol, and its salts (FAILLEBIN), A., 51.
- 5-Methylenedioxyphenyl-2-methyl-1:2:4-triazole, 3-hydroxy- (BACKER and MULDER), A., 182.
- s*-3:4-Methylenedioxyphenyl-2:4'-dinitronaphthylethylene (PASTAK), A., 392.
- 3:4-Methylenedioxyxystyrene, 6: ω -dibromo- (HAWORTH, PERKIN, and STEVENS), A., 952.
- 3':4'-Methylenedioxy-9-styrylxanthylum chloride (ATKINSON and HEILBRON), A., 620.
- 1:2-Methylenedioxy-4:6:3':4'-tetramethoxy-3-phenylethylene (NIERENSTEIN), A., 954.
- cycloMethylenediphenyl-2:3-dimethylpiperazines (MORGAN, HICKINBOTTOM, and BARKER), A., 503.
- cycloMethylenedi-*p*-tolyl- β -diamino-*n*-butanes, stereoisomeric (MORGAN, HICKINBOTTOM, and BARKER), A., 503.
- Methylene-ketones, hydroxy- (BENARY, MEYER, and CHARISIUS), A., 272; (BENARY), A., 500.
- Methylenementhone (RUPE and GUBLER), A., 841.

- 4'-5'-Methylene-9-styrylxanthylum chloride, 3:6-dihydroxy- (ATKINSON and HEILBRON), A., 620.
- Methylethoxymethylurethane (BLAISE and MILLIOTIS), A., 943.
- α -Methylethylacetone nitrile hydrochloride, and α -amino- and its hydrochloride, and (BILTZ and SLOTTA), A., 1046.
- Methylethylacetophenones, hydroxy-, and their derivatives (v. AUWERS, BUNDESMANN, and WIENERS), A., 609.
- δ -Methylethylallylguanidine, and its sulphate (KLINGNER), A., 946.
- 2-Methyl-5-ethyl-1- ϵ -aminoampylpiperidine, and its salts (v. BRAUN and ZOBEL), A., 1150.
- 4-Methyl-3-ethyl-2-anilinomethylpyrrole-5-carboxylic acid, ethyl ester, and derivatives (FISCHER and ERNST), A., 622.
- Methylethylarsinic acid, and its salts (GUERBER), A., 507.
- Methylethylbenzaldehydes, 4-hydroxy- (v. AUWERS, BUNDESMANN, and WIENERS), A., 609.
- 2-Methyl-5-ethyl-1- ϵ -benzamidoampylpiperidine (v. BRAUN and ZOBEL), A., 1150.
- Methylethylbenzo-1:4-pyrones, 6-chloro- (WITTIG, BANGERT, and RICHTER), A., 301.
- β -Methyl- β -ethylbutanol, and its derivatives (FAVORSKI and ZALESSKI-KIBARDINE), A., 45.
- N-Methyl-N-ethylcarbamide, cyano- (BILTZ and SLOTTA), A., 1046.
- Methylethylcarbinol, trichloro-, and its derivatives (HOWARD), A., 498.
- 4-Methyl-3-ethylcoumarin, 6-chloro- (WITTIG, BANGERT, and RICHTER), A., 301.
- N-Methyl-ethylidihydronicotine (KARRER and WIDMER), A., 627.
- 6-Methyl-3-ethylflavone (WITTIG, BANGERT, and RICHTER), A., 301.
- 2-Methyl-1-ethylglyoxaline, 5-chloro-, and its picrate (GRÄNACHER, SCHELLING, and SCHLATTER), A., 78.
- ζ -Methyl- γ -ethylheptane- $\gamma\delta$ -diol (NICOLLE), A., 383.
- ϵ -Methyl- γ -ethylhexane- $\gamma\delta$ -diol (NICOLLE), A., 383.
- 1-Methyl-3-ethyl-4'- Δ^2 -cyclohexen-5-one thiosemicarbazone (MACUREVITSCH), A., 521.
- 3-Methyl-5-ethyl-4'- Δ^2 -cyclohexenone phenyl- and thio-semicarbazones (MACUREVITSCH), A., 170.
- 3-Methyl-1-ethylhydantoin (BILTZ and SLOTTA), A., 1046.
- Methyl ethyl ketone chlorohydrin (FAVORSKI and ZALESSKI-KIBARDINE), A., 45.
- 2:4-dinitrophenylhydrazones (BRADY and ELSMIE), A., 394.
- nitrophenylsemicarbazone (WHEELER and WALKER), A., 62.
- ketone from condensation of mesityl oxide and, and its semicarbazone (EKELEY and CARPENTER), A., 1143.
- Methyl ethyl ketone, nitroso-, salts (KÜSTER, ERFLE, v. ROLL, and SCHILLER), A., 821.
- Methylethylphenyl acetates (v. AUWERS, BUNDESMANN, and WIENERS), A., 609.
- α -2-Methyl-5-ethylpiperidinopropionic acid, ethyl ester (v. BRAUN, LEISTNER, and MÜNCH), A., 1128.
- 4-Methyl-2-ethyl-3-propionylpyrrole (FISCHER and KLARER), A., 412.
- 4-Methyl-2-ethyl-3-propionylpyrrole-5-aldehyde, and its oxime (FISCHER and KLARER), A., 412.
- 4-Methyl-2-ethyl-3-propionylpyrroleazobenzenesulphonic acid (FISCHER and KLARER), A., 412.
- 4-Methyl-2-ethyl-3-propionylpyrrole-5-carboxylic acid (FISCHER and KLARER), A., 412.
- 4-Methyl-2-ethyl-3-propionylpyrrole, and its picrate (FISCHER and KLARER), A., 412.
- 3-Methyl-1-ethylpyrazole, and its picrate (v. AUWERS and HOLLMANN), A., 623.
- Methyl-1-ethylpyrazoles, salts of (v. AUWERS and HOLLMANN), A., 847.
- Methylethylpyrazolecarboxylic acids, and their salts and ethyl esters, and 4-bromo- (v. AUWERS and HOLLMANN), A., 623.
- 3-Methyl-4-ethyl-5-pyrazolone-1-carbamide (BACKER and MEYER), A., 305.
- 3-Methyl-4-ethyl-5-pyrazolone-1-carboxylic acid, esters (BACKER and MEYER), A., 305.
- 2-Methyl-4-ethylpyrrole, and its methene perchlorate (FISCHER and KLARER), A., 1261.
- 3-Methyl-2-ethylpyrrole, and its picrate (FISCHER and WIEDEMANN), A., 736.
- 4-Methyl-2-ethylpyrrole, and its picrate (FISCHER and KLARER), A., 412.
- 4-Methyl-2-ethyl-pyrroleazobenzenesulphonic acid (FISCHER and KLARER), A., 412.
- 2-Methyl-4-ethylpyrrole-5-carboxylic acid, derivatives of (FISCHER and KLARER), A., 1261.
- 4-Methyl-2-ethylpyrrole, and its salts (FISCHER and KLARER), A., 412.
- Methylfenchyl alcohol, dehydration of (NAMETKIN and BRIUSOVA), A., 619.
- 2-Methylisoflavone, 5:7:4'-trihydroxy-. See 2-Methylgenistein.
- 3-Methyl-5-furyl-4'- Δ^2 -cyclohexenone, semicarbazones of (MACUREVITSCH), A., 170.
- 1-Methyl-3-furyl-4'- Δ^2 -cyclohexen-5-one, semicarbazones of (MACUREVITSCH), A., 521.
- ζ -Methylgalactonic acid, and its salts (FREUDENBERG and SNEYKAL), A., 274.
- 2-Methylgenistein, and its O-triacetyl derivative (BAKER and ROBINSON), A., 1253.
- dimethyl ether, synthesis of (BAKER and ROBINSON), A., 1253.
- α -Methylgentiobioside, and its hepta-acetate (HELPERICH, KLEIN, and SCHÄFER), A., 387.
- Methyl- γ -cyclogeraniolene (ESCOURROU), A., 1238.
- Methylglucoside, derivatives of (OLDHAM), A., 152.
- α -Methylglucoside ζ -bromohydrin and ζ -chlorohydrin, and their triacetyl derivatives (HELPERICH, KLEIN, and SCHÄFER), A., 274.
- 6-bromohydrin, and its triacetyl and tribenzoyl derivatives (HELPERICH, KLEIN, and SCHÄFER), A., 386.
- α -Methylglucoside, γ -amino-, hydrochloride (FREUDENBERG, BURKHART, and BRAUN), A., 601.
- Methylglucosides, methylated, from isopropylidenglucose (LEVENE and MEYER), A., 1228.
- β -Methylglutaconic acid, esters, condensation of, with cyanoacetic esters (KÖHLER and REID), A., 48.
- Methylglyoxal (FISCHER and TAUBE), A., 599.
- and its aldehyde acetal (NEUBERG and DALMER), A., 148.
- formation of, from dextrose by micro-organisms (AUBEL), A., 1277.
- action of oxydoreductase on (LEBEDEV), A., 542.
- effect of administration of (SJOLEMA and SEEKLES), A., 1272.
- conversion of, into lactic acid by ketone-aldehyde mutase (GORR and PERLMANN), A., 1059.
- conversion of, into pyruvic acid (NEUBERG and GORR), A., 272.
- diacetate, and its p-nitrophenylhydrazones (SJOLEMA and SEEKLES), A., 1227.
- 1-Methylglyoxaline, 4-nitro-5-hydroxy-, and its salts (BALABAN), A., 623.
- Methylguanidine picrate (KAPELLER), A., 943.
- N-Methyl-N-(β -guanidinoethyl)guanidine, synthesis of, and its salts (SCHOTTE and PRIEWE), A., 717.
- γ -Methylheptane- $\gamma\epsilon$ -diol (PASTUREAU and ZAMENHOF), A., 1227.
- γ -Methylheptan- γ -ol- β -one, and its semicarbazone (LEERS), A., 599.
- β -Methylheptan- ζ -one, δ -hydroxy- (PASTUREAU and ZAMENHOF), A., 272.
- Methylheptenone, natural (ESCOURROU), A., 1022.
- β -Methyl- Δ^3 -hepten- ζ -one (isoamylideneacetone) (PASTUREAU and ZAMENHOF), A., 272.
- ζ -Methyl- Δ^3 -hepten- β -one, derivatives of (PASTUREAU and ZAMENHOF), A., 1227.
- γ -Methyl- Δ^3 -hepten- γ -ol, and its allophanate (LEERS), A., 596.
- 1-Methyl- $\Delta^{1,3}$ -cyclohexadienyl-3-cyanoacetic acid, methyl esters, isomeric, and their dibromides (FARMER and ROSS), A., 834.
- 1-Methyl- $\Delta^{1,3}$ -cyclohexadienyl-3- α -cyanopropionic acid, methyl ester (FARMER and ROSS), A., 834.
- 1-Methyl- $\Delta^{1,3}$ -cyclohexadienyl-3-propionitrile (FARMER and ROSS), A., 834.
- γ -Methylhexane (DE GRAEFF), A., 495.
- β -Methylhexane- $\beta\delta$ -diol, and γ -bromo-, and γ -chloro- (PASTUREAU and ZAMENHOF), A., 1227.
- Methylcyclohexanols, isomeric, and their salts and derivatives (GOUGH, HUNTER, and KENYON), A., 1032.
- naphthylurethanes from (BICKEL and FRENCH), A., 517.
- 2-Methylcyclohexanols, and their derivatives (GODCHOT and BEDOS), A., 164.
- i-m-Methylcyclohexanone, chlorination of (GODCHOT and BEDOS), A., 395.
- 1-Methylcyclohexan-2-one, 1-chloro- (GODCHOT and BEDOS), A., 169.
- 1-Methylcyclohexan-3-one-1-acetic acid, and its ethyl ester and their derivatives (FARMER and ROSS), A., 66.
- 1-Methylcyclohexan-3-one-4-carboxylic-1-acetic acid, ethyl esters (FARMER and ROSS), A., 66.

- 1-Methyl-*D*¹-cyclohexene-3:3-dicyanoacetamide (FARMER and ROSS), A., 834.
- Methylhexenols (PASTUREAU and ZAMENHOF), A., 1227.
- 1-Methyl-*D*¹-cyclohexen-3-one thiosemicarbazone (MACUREVITSCH), A., 521.
- 3-Methyl-*D*¹-cyclohexenone phenyl- and thio-semicarbazones (MACUREVITSCH), A., 170.
- 5-Methyl-*D*¹-cyclohexen-1-one (GODCHOT and BEDOS), A., 395.
- 3-Methyl-*D*¹-cyclohexenylacetic acid, and its ethyl ester (v. BRAUN and TEUFFERT), A., 66.
- α -Methyl-*D*¹-cyclohexenylacetone, and its semicarbazone (KON and SMITH), A., 952.
- 1-Methyl-*D*¹-cyclohexenylidene-3-cyanoacetic acid, salts and esters (FARMER and ROSS), A., 834.
- γ -Methylhexoic acid, thallous salt (WALTER), A., 712.
- 3-Methylcyclohexylacetic acids, and their ethyl esters (v. BRAUN and TEUFFERT), A., 66.
- 3-Methylcyclohexylbromoacetic acids, ethyl esters (v. BRAUN and TEUFFERT), A., 66.
- Methylhexylcarbinol, naphthylurethane from (BICKEL and FRENCH), A., 517.
- 4-Methyl-6-hexylcoumarin, 7-hydroxy- (TWISS), A., 1041.
- 3-Methylcyclohexyldimethylaminoacetic acid, ethyl ester, and its derivatives (v. BRAUN and TEUFFERT), A., 66.
- 3-Methylcyclohexylethylene glycol (v. BRAUN and TEUFFERT), A., 66.
- 3-Methylcyclohexylethylene oxides (v. BRAUN and TEUFFERT), A., 66.
- 3-Methylcyclohexylideneacetaldehyde, and its semicarbazone (RUPE and KAMBLI), A., 821.
- 3-Methylcyclohexylmethylcarbinol (VAN WOERDEN), A., 293.
- Methylhomovanillylamine hydrochloride (AKABORI), A., 957.
- β -Methylhydantoin, decomposition of, in the body (GAEBLER), A., 1272.
- 3-Methylhydantoin, 5-amino-, and its salts and acetyl derivatives (BILTZ and HANISCH), A., 414.
- 5-Methylhydantoins, 2-thio-, desmotropism in (SJOLLEMA and SEEKLES), A., 414.
- 3-Methylhydroxonic acid, and its salts and esters (BILTZ and HANISCH), A., 414.
- Methyl-4-hydroxybenzaldehyde, 2(or 3)-hydroxy- (JENSEN), A., 91.
- 2-Methyl-4-*p*-hydroxybenzylideneoxazolin-5-one (BEROMANN and STERN), A., 743.
- α -Methyl- β -hydroxyethylaminobenzoic lactone, and its salts (KIPRI-JANOV), A., 950.
- Methyl α -hydroxymethylene-ethyl ketone, sodium salt, derivatives of (BENARY), A., 1227.
- 4-Methyl-5-hydroxymethyl-2-methylthioluracil, and its dimeride (POETSCH and BEHREND), A., 739.
- 4-Methyl-5-hydroxymethylthiouracil (POETSCH and BEHREND), A., 739.
- Methyl- $\alpha\alpha$ -iminodipropionio acid, cyano-, ethyl ester and hydrochloride (SOEHLER and NEEF), A., 943.
- 4-Methylimino-5-ethoxy-1-methylhydantoyl ethylamide, and its acetyl derivative (BILTZ and LACHMANN), A., 1046.
- 4-Methylimino-5-ethoxy-1-methylhydantoylmethylamide, and its acetyl derivative (BILTZ and LACHMANN), A., 1046.
- 4-Methylimino-5-methoxy-1-methylhydantoylmethylamide (BILTZ and KLEIN), A., 182.
- 5-Methylindazole, 7-amino-, 7-chloroamino-, and 7-nitro-, acetyl and benzoyl derivatives of (v. AUWERS and FRESE), A., 529.
- 5-Methylindazole-1-carboxylic acid, 7-amino-, and 7-nitro-, ethyl esters (v. AUWERS and FRESE), A., 529.
- Methylisindigotins, and their derivatives (WAHL and FAIVRET), A., 960.
- Methylindirubins (WAHL and FAIVRET), A., 961.
- Methylindole, 3-amino-, and its picrate (PUTOCHIN), A., 1151.
- 2-Methylindole-3-aldoxime (PUTOCHIN), A., 1151.
- 2-Methylindolidenphenylcarbinol- α -carboxylic acid, and its salts (ODDO and PEROTTI), A., 1157.
- 2-Methylindoxazen, and its derivatives, and 4-amino- and nitro- (LINDEMANN and THIELE), A., 1047.
- Methylisatans (WAHL and FAIVRET), A., 960.
- 5-Methylisatide (WAHL and FAIVRET), A., 960.
- Methylketolephthalin, and its isomerides (ODDO), A., 1157.
- α -Methyl- α -lyxoside, preparation and properties of (PHELPS and HUDSON), A., 501.
- Methyl- α -methoxybenzaldoximes, and their derivatives (BRADY, DUNN, and GOLDSTEIN), A., 1142.
- Methyl- β -3-methoxy-4-benzoyloxyphenylethylamine, and its salts (AKABORI), A., 957.
- 1-Methyl-2-methoxystyryl-4-quinolines (TRÖGER and DUNKER), A., 526.
- Methyl-1-*p*-methylbenzylpyrrolidine, 2:5-dihydroxy- (v. BRAUN and LEISTNER), A., 1255.
- N*-Methyl-methyldihydronicotine (KARRER and WIDMER), A., 627.
- 1-Methyl-2-methylene-1:2-dihydro- β -naphthaquinoline (MILLS and RAPER), A., 78.
- 1-Methyl-2-methylenedihydroquinoline (ROSENHAUER, HOFFMANN, and UNGER), A., 735.
- allo*Methylmethylenediketopiperazine, and its methylene derivative (BEROMANN, MIEKELEY, and KANN), A., 1259.
- Methyl-3:4-methylenedioxybenzaldoximes, and their derivatives (BRADY, DUNN, and GOLDSTEIN), A., 1142.
- α - and β -Methylmorphimethines, metho-*p*-toluenesulphonates of (RODIONOV), A., 533.
- 1-Methylnaphthalene, 2:4-dinitro- (VESELY and PASTAK), A., 59.
- Methylnaphthalenes, bromoamino-, and their derivatives (RUPE and METZGER), A., 65.
- 1-Methylnaphthalene-4-sulphonic acid, 1-amino-, and its salts (RUPE and METZGER), A., 65.
- 2-Methyl- $\alpha\beta$ -naphtha-1:4-pyrone, and its acetyl derivative (WITTIG, BANOERT, and RIOHTER), A., 300.
- Methylnaphthaquinoline, bromo-, chloro-, and nitro-, and their salts (GIBSON, HARIHARAN, MENON, and SIMONSEN), A., 1154.
- N*-Methyl- β -naphthisatin (HELLER, FUCHS, JACOBSON, RASCHIO, and SCHÜTZE), A., 621.
- 1-Methyl-3-naphthoic acid, and its methyl ester (DARZENS), A., 1239.
- β - α -Methyl-3-nitroanisaldoxime (BRADY, DUNN, and GOLDSTEIN), A., 1142.
- N*-Methylnitrobenzaldoximes, derivatives of (BRADY, DUNN, and GOLDSTEIN), A., 1142.
- N*-Methyl-2:4-dinitrobenzaldoxime (BRADY, DUNN, and GOLDSTEIN), A., 1142.
- M*-Methyl-6-nitro-3:4-methylenedioxybenzaldoxime, and its hydrochloride (BRADY, DUNN, and GOLDSTEIN), A., 1142.
- β -Methylnonane- $\beta\gamma$ -diol (NICOLLE), A., 383.
- Methyl nonyl ketone, bromo- and chloro-, and their semicarbazones (GRIGNARD and PERRICHON), A., 382.
- Methyloctahydroacridines (PERKIN and SEDGWICK), A., 411.
- 2-Methyloctahydroanthraquinol, and its diacetate (SKITA), A., 174.
- 2-Methyloctahydroanthraquinone (SKITA), A., 174.
- γ -Methyloctan- γ -ol- β -one, and its semicarbazone (LEERS), A., 599.
- 1-Methyl-*D*¹-cyclooctene (RUZICKA and BRUGGER), A., 727.
- γ -Methyl-*D*¹-octinen- γ -ol, and its allophanate (LEERS), A., 596.
- Methyl-orange, use of, in determination of hydrogen ions with Clark buffer mixtures (KOLTHOFF), A., 701.
- N*-Methylornithine, derivatives of (STEIB), A., 824.
- Methyloxazolidonyl-3-allylthiocarbamide, 5-chloro- (FROMM), A., 717.
- Methyloxazolidonyl-3-phenylthiocarbamide, 5-chloro- (FROMM), A., 716.
- Methyloxazoline, 2-amino-5-iodo-, and 5-bromo- and 5-chloro-acetyl derivatives, acetates of (FROMM), A., 716.
- Methyloxazolinylallylthiocarbamides, 5-chloro-, and 2-imino-5-chloro- (FROMM), A., 716.
- Methyloxazolinylphenylthiocarbamides, 5-chloro- and 2-imino-5-chloro- (FROMM), A., 716.
- N*-Methyloxindole, 5-hydroxy- (MERCK and DÜTZMANN), (P.), B., 434.
- Methyloxindoles, and their benzylidene derivatives (WAHL and FAIVRET), A., 79, 961.
- 3-Methyloxonic acid, methyl ester (BILTZ and HANISCH), A., 414.
- β -Methylpentane, $\alpha\epsilon$ -diamino-, dihydrochloride (v. BRAUN and HAENSEL), A., 1143.
- β -Methylpentane- $\beta\delta\epsilon$ -triol, preparation of, and its influence on conductivity of boric acid (BÖESEKEN), A., 910.
- 8-Methylpentan- β -ol, α -hydroxylamino-, oxalate (SCHMIDT, ASCHERL, and MAYER), A., 45.
- 8-Methylpentan- β -ols, optically active, and their derivatives (LEVENE and MIKESKA), A., 45.
- α -Methylcyclopentanols, stereoisomeric, and their derivatives (GODCHOT and BEDOS), A., 394.

- 1-Methyl- Δ^1 -cyclopentan-2-ol-3-one, and its derivatives (ROJAHN and RÜHL), A., 617.
- 3-Methylcyclopentanone, and its semicarbazone (CHAVANNE), A., 1130.
- Methylpentanonols, and their semicarbazones (GEURDEN), A., 1025.
- β -Methyl- $\Delta\beta$ -pentene (MONTAGNE), A., 942.
- nitrolaniline and nitrosate (KLINGSTEDT), A., 45.
- β -Methyl- $\Delta\gamma$ -pentene- $\alpha\alpha$ -tricarboxylic acid, trimethyl ester (KÖHLER and BUTLER), A., 713.
- α -Methyl- $\Delta\beta$ -pentenoic acid, γ -chloro- (KÜSTER, MAURER, and PALM), A., 713.
- 1-Methyl- Δ^1 -cyclopenten-2-ol-3-one, and its derivatives, from crude pyroligneous acid (ROJAHN and RÜHL), A., 616.
- Methylpentosans, detection and determination of (OSHIMA and KONDO), A., 1164.
- 2-Methylphenarsazinic acid, and its sodium salt and hydrochloride (BURTON and GIBSON), A., 419.
- N*-Methyl-*p*-phenetidine *N*-methylsulphite (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 141.
- 2-Methyl-*p*-phenylenediamine, 5-chloro- (KENNER, TOD, and WITHAM), A., 58.
- β -Methylphenylethylamine hydrochloride, *p*-chloro-, benzoyl derivative of (v. BRAUN, GOLZ, and METZ), A., 1232.
- 4-Methyl-1:2-phthalide, and 4-bromo-, 4-chloro-, 4-cyano-, and 4-hydroxy- (PERKIN and STONE), A., 64.
- Methyl-1:2-phthalideoxalic acid, 4-hydroxy-, ethyl ester (PERKIN and STONE), A., 64.
- 4-Methyl-1:2-phthalyl chloride, 4-trichloro- (PERKIN and STONE), A., 64.
- β -Methylmelic- β -acetic acid, and its ethyl ester and derivatives (FARMER and ROSS), A., 66.
- Methylpropane- $\alpha\gamma$ -diol, β -nitro- β -hydroxy-, phosphoric esters of (ZETZSCHE and ZURBÜGG), A., 497.
- Methyl-*n*-propylarsinic acid (GUERBET), A., 507.
- Methylisopropylbenzaldehydes, iodohydroxy- (HENRY and SHARP), A., 1163.
- 6'-Methyl-3'-isopropylbenzophenone-2-sulphonic acid, 4'-hydroxy-, and its salts (ORNDORFF and CORNWELL), A., 610.
- Methylpropylcarbinol, trichloro-, and its derivatives (HOWARD), A., 496.
- N*-Methylpropyldihydronicotine (KARRER and WIDMER), A., 627.
- 6-Methyl-3-propylflavones (WITTIG, BANGERT, and RICHTER), A., 301.
- α -Methyl- β -propyl glycol bromohydrin methyl ether (SCHMIDT, v. KNILLING, and ASCHERL), A., 817.
- 2-Methyl-5-*n*-propyl- $\Delta^{1:4}$ -cyclohexadien-6-one-1-aldehyde, and its derivatives (RUPE and GUBLER), A., 841.
- 1-Methyl-3-isopropyl- Δ^2 -cyclohexenone thiosemicarbazone (MACUREVITSCH), A., 521.
- 3-Methyl-5-isopropyl- Δ^2 -cyclohexenone phenyl- and thio-semicarbazones (MACUREVITSCH), A., 170.
- Methyl *n*-propyl ketone, reaction of benzaldehyde with (NEUBERO and GORR), A., 272.
- ketone from condensation of mesityl oxide and, and its semicarbazone (EKELEY and CARPENTER), A., 1143.
- η -Methyl-3-propyloctane- $\delta\epsilon$ -diol (NICOLLE), A., 383.
- 2:2'-Methyl-5-isopropylphenyldecahydronaphthalene (GYSIN), A., 389.
- 3-Methyl-4-propyl-5-pyrazolone (BACKER and MEYER), A., 741.
- 2-Methyl-5-isopropylpyridine, and its salts (CURTIUS and BERTHO), A., 509, 1152.
- Methylisopropylquinoline - yellow. See Methylisopropylquinophthalone.
- Methylisopropylquinophthalone, and its disulphonic acid and sodium salt (PHILLIPS and GOSS), A., 526.
- 2-Methyl-4-propylcyclotelluripentane-3:5-dione dichlorides (MORGAN), A., 188.
- 2-Methyl-4-propylcyclotelluropentane-3:5-diones (MORGAN), A., 188.
- Methylprunetol. See Methylgenistein.
- α -Methylpulegone, constitution of (GRIGNARD and SAVARD), A., 72.
- N*-Methylputrescine, and its salts and derivatives (DUDLEY and THORPE), A., 53.
- 3-Methylpyrazole-5-carboxylic acid, and bromo-, and their anhydrides (ROJAHN and KÜHLING), A., 846.
- 3-Methyl-5-pyrazolone, 4-isonitroso-, and its silver derivative (BACKER and MEYER), A., 306.
- 3-Methylisopyrazolone hydrochloride (DE), A., 739.
- 3-Methyl-5-pyrazolone-1-carbamide (BACKER and MEYER), A., 305. and its derivatives (DE), A., 739.
- 3-Methylpyrazolone-1-carbonyl- β -aminocrotonic acid, ethyl ester and silver salt (DE), A., 739.
- 3-Methyl-5-pyrazolone-1-carboxylic acid, and 4-nitro-, esters (BACKER and MEYER), A., 305.
- Methylpyrazolone-1-thiocarbamides, and their derivatives (DE), A., 738.
- 3-Methylpyrazolone-1-thiocarbonyl- β -aminocrotonic acid, ethyl ester and its silver salt (DE), A., 739.
- 1-Methylpyridine 1-methylquinolinium chloroplatinate (SCHROETER and FINCK), A., 731.
- Methylpyridinium tetrabromo- and tetraiodo-thallates (KRAUSE and v. GROSSE), A., 1112.
- 1-Methyl-2-pyridoneimine hydriodide (MAGIDSON and MENSCHIKOV), A., 845.
- 1-Methyl-2-pyridonemethylimine methiodide (TSCHITSCHIBABIN and KONOVALOVA), A., 1153.
- 1-Methylpyridonenitroimide (TSCHITSCHIBABIN and MENSCHIKOV), A., 845.
- N*-Methyl-2-(2-pyridyl)pyrrole, pyrogenic rearrangement of (WIBAUT and DINGEMANSE), A., 1260.
- Methylpyriminazole, and its hydrobromide (TSCHITSCHIBABIN), A., 1153.
- 1-Methylpyrrole, catalytic reduction of (WIBAUT), A., 177.
- Methylpyrrole, 2-amino-, and its picrate (PUTOCHIN), A., 1151.
- 3-Methylpyrrole-5-carbohydrazide-4-carboxylic acid, ethyl ester, and its derivatives (FISCHER and WIEDEMANN), A., 736.
- 3-Methylpyrrole-2-carboxylic acid, ethyl ester (FISCHER and WIEDEMANN), A., 736.
- 3-Methylpyrrole-4-carboxylic acid, ethyl ester, and its reactions (FISCHER and WIEDEMANN), A., 736.
- 3-Methylpyrrole-4:5-dicarboxylic acid, and its ethyl ester, and its derivatives (FISCHER and WIEDEMANN), A., 736.
- 3-Methylpyrrole-4-propionic acid. See Opsopyrrolecarboxylic acid.
- 1-Methylpyrrolidine, preparation of (WIBAUT), A., 177.
- 2-Methylpyrrolidine, oxidation of, by chromic acid (TAKAHASHI), A., 1255.
- 2-Methylquinoline oxide (MEISENHEIMER and STOTZ), A., 77.
- 2-Methylquinoline, 6-amino-, 6-bromo-, 6-chloro-, and 6-nitro-, derivatives of (BROWNING, COHEN, ELLINGWORTH, and GULBRAUSEN), A., 1153.
- ω -bromo-, bromonitro-, and ω -hydroxy-derivatives (HAMMICK), A., 846.
- 4-hydroxy-, dimethylaminoethyl ether (CALLSEN and WINTHROP CHEM. Co.), (P.), B., 465.
- 4-Methylquinoline, 2-hydroxy-, dimethylaminoethyl and piperidoethyl ethers and their hydrochlorides (CALLSEN and WINTHROP CHEM. Co.), (P.), B., 464, 805*.
- 8-Methylquinoline, 2:3-dihydroxy- (HELLER, FUCHS, JACOBSON, RASCHIG, and SCHÜRZE), A., 620.
- 2-Methylquinolines, synthesis of (LINDNER and SIEGEL; LINDNER and STAUFER), A., 410.
- 6-Methylquinoline-2-aldehyde methiodide *p*-nitrophenylhydrazine (HUMPHRIES), A., 414.
- 2-Methyl-5:6-quinolinofuran, and its salts (DEY and SESHADRI), A., 1159.
- 2-Methyl-5:6-quinolinofuran- α -carboxylic acid, and its silver salt and ethyl ester (DEY and SESHADRI), A., 1159.
- 5:6-(2'-Methyl-5':6'-quinolino)- α -pyrone, 3-bromo-, and its salts and derivatives (DEY and SESHADRI), A., 1159.
- N*-Methylquinrhodine (GRÄNACHER, OFNER, and KLOFFENSTEIN), A., 81.
- ϵ -Methylrhamnose, and its phenylhydrazone (FREUDENBERG and WOLF), A., 601.
- α -Methyl- δ -isorhamnoside, and its triacetyl derivative (HELFERICH, KLEIN, and SCHÄFER), A., 275.
- and its tribenzoyl derivative (HELFERICH, KLEIN, and SCHÄFER), A., 387.
- Methylsinomenine methyl sulphate and semicarbazone (GOTO), A., 1160.
- α - and β -Methylsinomeninemethines, and their derivatives (GOTO), A., 1161.
- Methylstibine halides, oxide and sulphide (GUERBET), A., 507.
- Methylsuccinic acid, and its esters, preparation of, from lactic acid (IPATIEV and RAZUBAIEV), A., 1124.
- d*-Methylsuccinic acid from *d*- β -methyladipic acid (v. BRAUN and JOSTES), A., 938.
- α -Methylsulphonylbenzoic acid, and its methyl ester (ARNDT, KIRSCH, and NACHTWEY), A., 843.
- α -Methylsulphoxidobenzoic acid (ARNDT, KIRSCH, and NACHTWEY), A., 843.

- Methylterephthalic acid, 2-hydroxy- (PERKIN and STONE), A., 64.
 Methyltetra-acetyl galactosides (LEVENE and SOBOTKA), A., 601.
 Methyltetra-acetylmannosides (LEVENE and SOBOTKA), A., 601.
 6 (or 8)-Methyltetrahydroacridine, and its pierate (PERKIN and SEDGWICK), A., 411.
 6 (or 8)-Methyltetrahydroacridinecarboxylic acid (PERKIN and SEDGWICK), A., 411.
 4*s*-Methyltetrahydroarsinoline, derivatives of (ROBERTS, TURNER, and BURY), A., 852.
 6-Methyltetrahydrocarbazole, derivatives of, and 5-nitro- (MANJUNATH and PLANT), A., 1151.
 6-Methyltetrahydrocarbazolenine, 10- and 11-hydroxy-, acetyl derivatives (MANJUNATH and PLANT), A., 1151.
 6-Methyltetrahydrocarbazyl-9-magnesium iodide (MANJUNATH and PLANT), A., 1151.
 1-Methyl-1:2:3:4-tetrahydronaphthalene-3-carboxylic acid, and its methyl ester (DARZENS), A., 1239.
 2-Methyl-7:8:9:10-tetrahydro- α -naphthaquinoline, and its salts (LINDNER and SIEGEL), A., 410.
dl-Methyl-1:2:3:4-tetrahydronaphthaquinolines, and their salts and benzoyl derivative (GIBSON, HARIHARAN, MENON, and SIMONSEN), A., 1154.
 Methyl-4'-tetrahydropthalide (BERLINGOZZI and MAZZA), A., 835.
 Methylthiazane oxides, and their hydrochlorides (LAWSON and REID), A., 80.
 3-Methylthiazolinyl-5-chloromethyloxazolidone (FROMM), A., 717.
 3-Methyl-4:1:2-thiodiazole, 5-amino-, benzoyl derivative (FROMM), A., 717.
 3-Methyl-4:1:2-thiodiazolylphenylthiocarbamide, 5-amino- (FROMM), A., 717.
 5-Methylthioguaiacol, and 3:5-dibromo-, and nitro- (HOLMES and C. K. and E. H. INGOLD), A., 947.
 Methylthiol groups, influence of, on colour (HODGSON and HANDLEY), A., 515.
 5-Methylthiolaceto-*o*-toluidide (CHILD and SMILES), A., 1244.
 Methylthiolanisidines, and their hydrochlorides (HODGSON and HANDLEY), A., 516.
o-Methylthiolbenzonitrile (ARNDT, KIRSCH, and NACHTWEY), A., 843.
 Methylthionaphthens, chlorohydroxy-derivatives (HERZ, BRUNNER, and GRASSELLI DYESTUFF CORP.), (P.), B., 816.
 Methylthiopentose, and its derivatives (SUSUKI and MORI), A., 96.
 Methylthiouracil, and its methyl ether, action of formaldehyde on (POETSCH and BEHREND), A., 739.
 Methyl-1:2:3-triazoles, amino-, derivatives of (STOLLÉ), A., 1158.
 5-Methyl-1:3:4-triazole-3-(or 4)-carboxylic acid, 2-chloro-, ethyl ester (ROJAHN and TRILOV), A., 79.
 Methyltri- β -bromoallylammonium bromide (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
 Methyltri- β -chloroallylammonium bromide (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
 Methyltricyclene, preparation of (NAMETKIN and BRIUSOVA), A., 619.
 Methyltrihexosan, hydrolysis of (KÜHN and ZIESE), A., 1230.
 2-Methyl-8-triphenylmethylindole (PIERONI and VEREMEENCO), A., 1157.
 8-Methylnndecane- δ -diol (NICOLLE), A., 383.
 7-Methyluric acid, spontaneous oxidation of (PIAUX), A., 1261.
dl- γ -Methylvaleryl-(*N*)-*dl*- α -amino- δ -hydroxyvaleric acid, bromo- (ABDERHALDEN and SICKEL), A., 748.
 Methylvinylecyanamide (v. BRAUN, GOLL, and ZOBEL), A., 740.
 Methylxanthyl perchlorate (CONANT, SMALL, and SLOAN), A., 842.
 γ -Methylxyloside (HAWORTH and WESTGARTH), A., 600.
 Methylxobimbenic acid methylbetaine (HAHN and BRANDENBERG), A., 1263.
 Mica from Swedish limestone (v. ECKERMANN), A., 265.
 basio (HALLIMOND), A., 815.
 plates, dispersion of double refraction and thickness of (HORI), A., 887.
 Mice, effect of sugar and of insulin on carbohydrate metabolism of (BISSINGER and LESSER), A., 436.
 white, nutrition of (BEARD), A., 429.
 Michler's hydrol, condensations with (HUMPHRIES), A., 414.
 Microbalance, studies with the (HARTUNG), A., 34, 593, 808.
 Microbes (*micro-organisms*), preparation of, free from nucleic acids (BEHRINGSWERKE A.-G.), (P.), B., 851, 852.
 adsorption of salts by colloids of (PAVLOV), A., 900.
 growth of, on irradiated lipin-containing media (v. EULER), A., 435.
 Microbes, effect of benzoic acid and its derivatives on development of (SABALITSCHKA, DIETRICH, and BÜHM), A., 1059.
 killing of (RUTTEL and AMER. ELECTRO-OSMOSIS CORP.), (P.), B., 470*.
 nitrogen-fixing, multiplication of, in soil (VINOGRADSKI), B., 505.
 soil, plate counts of (SMITH and WORDEN), B., 335.
 Microchemistry, crystallisation by inoculation in (SCHOORL), A., 1500.
 Microcricoscopy (PASTAK), A., 349.
 Micro-crystalloscopy (DENIGÈS), A., 489.
 Microdissection. See Micurgy.
 Micro-physico-chemistry (KELLER), A., 353.
 Microscope, use of, in the textile laboratory (LAWRIE), B., 355.
 Micurgy, application of, to colloid chemistry (HAUSER), B., 175.
 Milarite, crystal structure of (RINNE), A., 1085.
 Mildew in cotton goods (MORRIS), B., 186, 187.
 Milk, production of, with Indian foodstuffs (WARTH, SINGH, and HUSEIN), B., 993.
 treatment of (BOSWORTH and CHRYSLER), (P.), B., 106.
 deodorisation, cooling, and dehydration of (TE AROKA DAIRY Co.), (P.), B., 74.
 apparatus for desiccation of (COLLIS and COLLIS Co.), (P.), B., 419.
 filters for (SELIGMAN), (P.), B., 297.
 electrical conductivity of (GERBER), B., 845.
 action of heat on (MAGEE and HARVEY), A., 970.
 determination of density of (GERUM), B., 1027.
 coagulation of, by rennin (PALMER and RICHARDSON), A., 905;
 (DE DOMINICIS and LA ROTONDA), A., 1174.
 secretion of calcium in, with reference to caseinogen equilibria (WRIGHT), A., 1269.
 effect of calcium or inorganic phosphorus on (ZAYKOWSKY), A., 539.
 citric acid content of (SHERWOOD and HAMMER), A., 1269.
 diastase of (CHIRZASZCZ and GORALOWNA), A., 321.
 relation between the lactic acid content of, and its loss in dry extract (FOUASSIER and MAURICE), B., 643.
 protective action of yeast in, on lactic acid bacteria (SLOBODSKA-ZAYKOVSKA), A., 545.
 effect of addition of foodstuffs to, on nitrogen retention in growth (TERROINE and MENDLER), A., 197.
 extraction of oil from (NORTH and MILK OIL CORP.), (P.), B., 607.
 recovery of oil or fat from (MILK OIL CORP.), (P.), B., 106*, 339*.
 perhydridase of (SBARSKY), A., 202.
 phosphorus compounds in (RIMINGTON and KAY), A., 970.
 action of rennin on proteins of (ZAYKOVSKI), A., 543.
 reductase of (BARTHEL), B., 605.
 ropiness in, due to surface influence (MATTICK), B., 895.
 effect of irradiation on antirachitic properties of (STEENBOCK, HART, HOPPERT, and BLACK), A., 437.
 destruction of vitamin-A in, by ultra-violet light (TITUS, HUGHES, HINSHAW, and FITCH), B., 846.
 effect of drying on vitamins of (JEPHCOTT and BACHARACH), B., 718.
 relation of serum globulins to "creaming" of (BROUWER), B., 337.
 effect of chamomile in hay on (PROCTER), B., 895.
 action of *Streptococci* on (GORINI), B., 418.
 action of typhoid bacilli on (GORINI), A., 1278.
 nutrition value of, for nitrogen equilibrium (ROSE and MACLEOD), A., 428.
 influence of various salts on (MATTICK and WRIGHT), A., 195.
 apparatus for obtaining composite samples of (HOUSTON), B., 930.
 from diseased cows, freezing point of (STRAUB), B., 765.
 cow's or goat's, nitrogen and mineral balances in nutrition with (DANIELS and STEARNS), A., 197.
 cow's and human, phosphorus content of (LENSTRUP), A., 1168.
 human, vitamins in (MEYER and NASSAU), A., 1064.
 Bulgarian (BUEL), (P.), B., 848.
 centrifuged, detection of, in whole milk (HEKMA), B., 212.
 soured, distinction between buttermilk and (BROUWER), B., 212.
 condensed (HATMAKER), (P.), B., 766.
 determination of sucrose in (SCHERINGA), B., 26; (JORGENSEN), B., 212.
 determination of sucrose and its mixtures with sugars in (FINCKE), B., 252.

- Milk**, condensed, sweetened, determination of total solids in (RICE and MISCAL), B., 800.
determination of sucrose in, polarimetrically (HONEGGER), B., 992.
Danish, casein content of (HÖYBERG), B., 212.
dried, determination of fat in (DELLEPIANE), B., 563.
evaporated, stability of, during sterilisation (BENTON and ALBERG), A., 858.
malted, manufacture of yeast from (HILL, GIVENS, and NORTHWESTERN YEAST Co.), (P.), B., 719.
powdered, manufacture of (CHRISTENSEN), (P.), B., 383.
spray drying apparatus for (MILKAL, LTD. and SIERRA), (P.), B., 297.
as food (ANDEREGG and NELSON), B., 643.
skim, influence of, on creaming of washed milk-fat globules (HEKMA), B., 337.
sour, production of (NEUHAUSER), (P.), B., 419.
whole, bacterial count of, and of cream and skim milk from it (LEETE), B., 295.
analysis of confectionery products containing (KUHLMANN and GROSSFELD), B., 252.
amyl alcohol unsuitable for testing of, by Gerber's method (GOY and JANISCH), B., 252.
reduction test of (BARTHEL), B., 105.
butyric acid value for fat of (KUHLMANN and GROSSFELD), B., 447.
and milk products, "cryolac" number of, in determination of added water (POST), B., 846.
detection of alkalinity of, with bromocresol-purple (PROCTER and MATTICK), B., 295.
detection of peroxydase in (BORINSKI), B., 418.
determination of calcium in (CORLEY and DENIS), A., 444.
determination of fat in (BAUMANN, KUHLMANN, and GROSSFELD), B., 499; (CHAVASTELON and ELOUARD), B., 509; (PLATON), B., 563.
determination of sediment in (TANKARD), B., 171.
determination of sodium in (BARTHE and DUFILHO), B., 644.
determination of uric acid in (REIF), A., 212.
Milk fat, detection and determination of fat of, in cacao butter (KUHLMANN and GROSSFELD), B., 165.
determination of, in mixtures of fats (GROSSFELD), B., 447, 678.
determination of, in fat mixtures and sweets (FINCKE), B., 836.
determination of, in foodstuffs (KUHLMANN and GROSSFELD), B., 252.
Milk foods, non-souring (LONG and LACTEIN Co.), (P.), B., 896.
Milk products (PEEBLES), (P.), B., 383.
Milk of lime. See Calcium hydroxide.
Mills, ball (LINDHARD and SMITH & Co.), (P.), B., 728; (BARKER), (P.), B., 808.
colloid. See Colloid mills.
comminuting (NEWHOUSE and ALLIS-CHALMERS MANUF. Co.), (P.), B., 728.
crushing (SILVA), (P.), B., 424; (STEBBINS), (P.), B., 568; (BRYANT), (P.), B., 650.
gyratory (ALLIS-CHALMERS MANUF. Co. and NEWHOUSE), (P.), B., 520.
ring and roll (ACIÉRIES RÉUNIES DE BURBACH-EICH-DUDELANGE), (P.), B., 392.
crushing and grinding (HALL), (P.), B., 345.
disintegrating (ROTH), (P.), B., 471.
grinding (SEDBERRY), (P.), B., 3*; (JACOBSON), (P.), B., 304; (SHELTON; BEYERLE), (P.), B., 345; (GREENWOOD), (P.), B., 424; (SCHERBAUM), (P.), B., 424, 615, 695; (BOUZIN; KELLER; RAYMOND and RAYMOND BROS. IMPACT PULVERIZER Co.; STRACHAN and STRACHAN TUBE MILL Co.), (P.), B., 520; (MIDDLEBOE and SMITH & Co.), (P.), B., 650*; (BOOTH; LOESCHE; BONNOT, BARKER, and BONNOT Co.), (P.), B., 695; (HILDEBRANDT), (P.), B., 727.
discs for use in (BLUME), (P.), B., 648.
for refining cocoa beans, chocolate, and chemicals (MCINTYRE), (P.), B., 650.
ball (LINDHARD, and SMITH & Co.), (P.), B., 176.
with rubber lining (GOODRICH Co. and GAMMETER), (P.), B., 32.
ball or tube (DAVIS), (P.), B., 392; (HERBST), (P.), B., 615.
tube (WICKING'SCHE PORTLAND-CEMENT & WASSERKALKWERKE and ANDREAS), (P.), B., 344, 775.
vertical cone (GENTRUP), (P.), B., 424.
- Mills**, pulverising (RILEY and SANFORD RILEY STOKER Co.), (P.), B., 305*; (MCKAIN), (P.), B., 520; (RAYMOND BROS. IMPACT PULVERIZER Co., CRITES, and VOGEL), (P.), B., 648; (RAYMOND BROS. IMPACT PULVERIZER Co., LAURITZEN, and VOGEL), (P.), B., 856; (STRACHAN TUBE MILL Co. and STRACHAN), (P.), B., 904*; (READ), (P.), B., 999.
regulation of feed to (RAYMOND BROS. IMPACT PULVERIZER Co.), (P.), B., 178*.
rod (GREENFIELD and ALLIS-CHALMERS MANUF. Co.), (P.), B., 728.
roll or cylinder, for paint grinding (A. O. and W. BUNLER), (P.), B., 937.
tube, liners for (SMITH & Co.), (P.), B., 856.
Milling of cereals (MAROTTA), B., 992.
Mimetites, synthetic (CAROBBI and RESTAINO), A., 811.
Mineralia of Avicenna, Arabic test of (HOLMYARD), A., 378.
Minerals, spectroscopy of (WILD and KLEMM), A., 594, 665, 708.
Röntgen-ray investigation of (RINNE), A., 229.
electromagnetic separators for (KOZUMI), (P.), B., 675.
treatment of (BORCHERDT and NEW JERSEY ZINC Co.), (P.), B., 674.
faint coloration of (KLEMM and WILD), A., 594.
coloration of, with iron compounds (MACCARTHY), A., 933.
by radium rays (LEITMEIER; DOELTER), A., 367.
apparatus for washing and classifying of (CLOUWEZ), (P.), B., 808.
dehydration of (WADE and NEW YORK ZINC Co.), (P.), B., 305*.
cause of froth flotation of (McLACHLAN), B., 96.
bromine and iodine in (v. FELLENER and LUNDE), A., 1022.
iron in (MACCARTHY), A., 265.
earthy, treatment of (FELDENHEIMER), (P.), B., 274*.
of the grunerite-cummingtonite-kupferite series, optical properties of (WINCHELL), A., 380.
Japanese (SHIBATA, KIMURA, and UEMURA; KIMURA), A., 144.
pulverised, treatment of (DE SPIRLET), (P.), B., 473*.
radioactive. See Radioactive minerals.
rock-forming, discrimination of constituents of (TSUBOI), A., 933.
sulphide, effect of cyanogen compounds on flotation of (TUCKER, GATES, and HEAD), B., 366.
- Mines**, preventing or quenching of explosions or fires in (WASHINGTON CHEMICAL Co. and NEWALL), (P.), B., 566.
Miscometers (HOUSTON), B., 930.
Mitsubaene, and its derivatives (HIRANO), A., 408.
Mitsuba-zeri. See *Cryptotaenia japonica*.
Mixing of granular substances and liquids (LENART), (P.), B., 304.
of liquids (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 177.
of liquids and gases (LUSCHER), (P.), B., 807.
Mixing apparatus, for liquids and gases (KIRKHAM, HULETT, & CHANDLER, LTD. and SLATER), (P.), B., 857.
for soluble and insoluble substances (BENDIXEN, McKECHNIE, and REID), (P.), B., 2.
Mixing machines (HAAGEN & RINAU and RINAU), B., (P.), 3*; (WELCH), (P.), B., 426*; (AUSTEN and AMER. CREOSOTING Co.), (P.), B., 648.
laboratory, for solids (HIXON), B., 303.
Mixtures, distribution of constituents of, between the phases (KLEEMAN), A., 1211.
logarithmic rule of (LICHTENECKER), A., 1089.
of liquid and insoluble solids, preventing separation of (CHANCE), (P.), B., 33.
binary, thermodynamics of (HEITLER), A., 1006.
vapour pressure of (SAMESHIMA), A., 908.
eutectic point lowering in (KORDES), A., 798.
binary organic, properties of (SCHMIDT), A., 787.
heterogeneous ternary, distillation of (BARBAUDY), A., 578.
Mohua cake, as fertiliser (REGE), B., 335.
Molasses, theory of the formation of (DEDEK and TEROHOV), B., 927.
purification of, with hydrochloric acid (DORFMÜLLER and TÖDT), B., 72.
treatment of, with zeolites in applying the Steffens process (BACHLER), B., 336.
recovery of sugar from (BLUM), (P.), B., 294; (DEGUIDE), (P.), B., 561.
production of yeast and alcohol from (DRESDENER PRESSHEFEN- & KORNSPRITUS-FABR.), (P.), B., 211.
product from (WILKINS, REINER, and GOULD), (P.), B., 928.
improvement of, as nutrient medium for aroma-producing bacteria (NITSCHKE), (P.), B., 171.
spent wash as a fertiliser (CERASOLI), B., 562.
beet, colouring matters of (SIMMICH), B., 336.

- Molasses, beet, organic acids and bases from (TAKAYAMA), (P.), B., 800*.
- nitrogenous substances in (PARISI), B., 169.
- determination of sucrose in (SAILLARD), B., 103.
- Molecular association and the equation of state (CARROLL), A., 894.
- attraction and velocity of reaction (MAASS and SVERTZ), A., 131.
- compounds, density of (SKRAUP and EISEMANN), A., 999.
- compounds, organic (WEISSENBERGER, SCHUSTER, and HENKE), A., 381, 682; (WEISSENBERGER and SCHUSTER; WEISSENBERGER, SCHUSTER, and PAMER; WEISSENBERGER, SCHUSTER, and LIEBACHER), A., 465; (WEISSENBERGER, HENKE, and BREGMANN), A., 466; (WEISSENBERGER, HENKE, and SPERLING; WEISSENBERGER), A., 787.
- composition and structure of (RHEINBOLDT), A., 782.
- diameters at the boiling point (MOKRUSCHIN), A., 780.
- orientation (RIDEAL), A., 1093.
- refraction. See under Refraction.
- solution volume in relation to association (BURROW and JAMES), A., 1199.
- structure and crystal structure (REIS), A., 934.
- stereochemistry of (REIS), A., 934.
- surface energy, relation of, to internal latent heat of evaporation (VAN LAAR), A., 343.
- susceptibility of alkali metals (SUCKSMITH), A., 782.
- symmetry and odour (v. BRAUN and TEUFFERT), A., 65; (v. BRAUN and HAENSEL), A., 1142.
- Molecules, structure of (BIRGE), A., 337.
- in relation to anisotropy (RAMANATHAN), A., 226.
- structure and dipole moment of (HÜJENDAHN), A., 779.
- rotation of (DENNISON), A., 994.
- size of, and their band spectra (BIRGE), A., 12.
- electrostatic moments of (CLARK), A., 1075.
- electrical polarity of (RAMAN and KRISHNAN), A., 998.
- orientation of, in a magnetic field (BRET), A., 11.
- distribution and orientation of (LANGMUIR), A., 1003.
- mechanics of (CASARES), A., 338.
- acid-basic function of (BRÖNSTED), A., 797.
- diatomic (v. WISNIEWSKI), A., 779.
- structure and band spectra of (MULLIKEN), A., 657.
- electronic states of, in relation to band spectra (MULLIKEN), A., 1079.
- energies and frequency of states of (OPPENHEIMER), A., 991.
- quantised motion of (HALLÉN), A., 333.
- excited, emission of light by (TERENIN), A., 776.
- mechanics of (MENSING), A., 10.
- fluorescent. See Fluorescent molecules.
- heteropolar, dissociation of, by absorption of light (KONDRATJEV), A., 1216.
- isosteric isomeric, relative stabilities of (PAULING and HENDRICKS), A., 458.
- newly-formed, possible enhanced activity of (GOSS and INGOLD), A., 289.
- odd, magnetic properties of (TAYLOR), A., 566.
- polyatomic, rotational energy of (WITMER), A., 1192.
- dielectric constant of (KRONIG), A., 1192.
- rotating, in an electric field (LESSHEIM), A., 333.
- rotating oscillating, quantum mechanics (MENSING), A., 657.
- tri- and poly-atomic, quantum theory of (LUTGEMEIER), A., 991.
- Molybdatotetramminecobaltic salts. See under Cobalt bases.
- Molybdenite containing copper and bismuth compounds, purification of (POKORNY), (P.), B., 591.
- separation of copper and bismuth from (POKORNY), (P.), B., 496.
- Molybdenum, manufacture of thin sheets of (GEN. ELECTRIC Co. and PATENT TREUHAND GES. F. ELEKTR. GLÜHLAMPEN), (P.), B., 370*.
- spectrum of (MEGGERS and KIESS), A., 651.
- absorption spectrum of (DORGELO), A., 556.
- Zeeman effect in arc and spark spectra of (WILHELMY), A., 767.
- X-ray spectrum of (ALLISON and ARMSTRONG), A., 1186; (BISHOP), A., 1187.
- scattering of X-rays by (ROSS), A., 1186.
- electronic discharge from (PIERSOL), A., 1074.
- thermionic emission of (ZWIKKER), A., 1188.
- specific heat of, at low temperatures (SIMON and ZEIDLER), A., 1103.
- effect of temperature on physical properties of (WORTHING), A., 892.
- position of, in the potential series (RUSSELL and ROWELL), A., 911.
- mixed crystals of tungsten and, corrosion of (VAN LIEMPT), A., 896.
- Molybdenum, rolled, crystal structure of (KONOBEEVSKI), A., 1195.
- cementation of iron and copper alloys by (LAISSUS), B., 545.
- Molybdenum alloys, preparation of (BOERICKE), (P.), B., 63.
- carbon, X-ray analysis of (WESTGREN and PHRAGMÉN), A., 1084.
- Molybdenum compounds, abrasives containing (NORSKE MOLYBDENPRODUKTER A.-S.), (P.), B., 489.
- tervalent (WARDLAW and HARDING), A., 812.
- Molybdenum bromides (WARDLAW and HARDING), A., 812.
- oxide, spectrum of mixed titanium and vanadium oxides (EPPLEY), A., 446.
- Molybdate acid, constitution of solutions of (TRAVERS and MALAPRADE), A., 925.
- sols, preparation of (DUMANSKI, BUNTIN, DIJATSKOWSKI, and KNIGA), A., 469.
- complex salts of, with organic bases (DI CAPUA), A., 304.
- complex compounds of, with protocatechualdehyde (FERNANDES), A., 1036.
- compounds of, with pyrocatechol, pyrogallol, and gallic acid (WEINLAND, BABEL, GROSS, and MAI), A., 397.
- Molybdates, constitution of (TRAVERS and MALAPRADE), A., 1114.
- mutarotation of mixtures of ethyl malate and (DARMOIS), A., 457.
- of cobaltamines (PAUL and SARKAR), A., 588.
- Molybdenum detection, determination, and separation:—
- detection of, with pyrocatechol acetate and aniline or piperazine (MARTINI), A., 1244.
- determination of, colorimetrically (FUNCK), A., 815.
- separation of, from ores (RIDEOUT), (P.), B., 63.
- Molybdomalic acid, rotation and hydrogen-ion concentration of (DARMOIS), A., 778.
- Molybdophosphotungstic acid, preparation of reagent from, for phenols and vitamins (BEZSSONOFF), A., 722.
- Monascus purpureus*, enzymes of (HAGIWARA and AOYAMA), A., 1278.
- Monel metal, use of, for vanilla flavouring containers (HOLLINGSHEAD and OTTERBACHER), B., 848.
- Monochromators (LEISS), A., 1185.
- Monolite yellow G, constitution of (ROWE, BURR, and CORBISLEY), B., 310.
- Monosaccharides, constitution of (HIRST and MACBETH), A., 273; (HIRST), A., 385.
- acetylated (LEVENE and SOBOTKA), A., 601.
- Montan wax, acetyl value of the dry distillate of (HOLDE), A., 1123.
- Mordants for basic dyes (A.-G. F. ANILIN-FABR.), (P.), B., 596.
- for cotton (SELLET), (P.), B., 153.
- for dyeing of glove leather (SIMONCINI), B., 49.
- use of "aktivin" in volumetric analysis of (JANGMICH and HACKL), B., 913.
- Morin, aluminium and ferric salts (ZETZSCHE and LOOSLI), A., 67.
- Morinidin chloride 3-methyl ether (GATEWOOD and ROBINSON), A., 1043.
- Morphine, ultra-violet absorption spectra of solutions of (BONTEMPI), A., 223.
- dissociation constant of, and its application in analysis (MORTON), B., 644.
- solutions (HOOPER and METZ LABORATORIES), (P.), B., 172.
- content of opium poppy latex, effect of manures on (ANNETT and SINGH), B., 74.
- effect of, on ions in blood plasma (CLOETTA and BRAUCHLI), A., 431.
- effect of, on protein metabolism (VÖLKER), A., 974.
- alkyl ethers and derivatives, manufacture of (MERCK, KRAUSS, and KOULEN), (P.), B., 216.
- colour reactions of (EKKERT), A., 965.
- reaction of, with potassium ferricyanide (BERETEVIDE), A., 1048.
- detection of (ALOX, VALDIGUIÉ, and ALOY), A., 850.
- determination of, in poppy extracts (BENNETT and GARRATT), B., 801.
- determination of, in opium (MACHIGUCHI and SHIRONO), B., 27.
- isoapoMorphine dimethyl ether methosulphate (ROBINSON and SHINODA), A., 1048.
- Morphine group (VAN DUIN, ROBINSON, and SMITH; CAHN and ROBINSON), A., 745; (CAHN), A., 1264.
- Morpholines, dicyclic (v. BRAUN and LEISTNER), A., 1255.
- Morphyrrolidine, and its derivatives, and 1-cyano- (v. BRAUN and LEISTNER), A., 1255.
- Mortar, manufacture of (SIMON), (P.), B., 159.
- binding material for (SILBERMANN), (P.), B., 55.

- Mortar, mixing of (RUEF), (P.), B., 729.
 sands for (BURCHARTZ), (P.), B., 948.
 for cement (SOMMER), (P.), B., 193.
 for paving and road-making materials (VAN WESTRUM), (P.), B., 363.
 cement-lime (JOHNSON), B., 668.
 heat-insulating (CALDWELL and CELITE Co.), (P.), B., 15.
 determination of soluble silica in (FLORENTIN), B., 668, 1015*.
 Mosaic gold. See Tin sulphide.
 Mosses, influence of electrolytes on gaseous exchange of (MAYER and PLANTEFOL), A., 208.
 Spanish, ash of (WHERRY and BUCHANAN), A., 1280.
 "Motalin" (OSTWALD), B., 571.
 Moths, insecticide for (STRAUB), (P.), B., 188.
 protection of fabrics against (NAEFE), (P.), B., 47; (FARR. v. BAYER & Co.), (P.), B., 49*; (SCHMITZ), (P.), B., 314; (J. M., M. J., and I. B. ROSS), (P.), B., 913.
 Mother-of-pearl, formation of (GANGULY), A., 813.
 Motors, carbon deposits in, from lubricating oils (LIVINGSTONE, MARLEY, and GRUSE), B., 571.
 aviation, selection of metals for (GRARD), B., 672.
 explosion (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 701*.
 laboratory, safeguarding of (TRUMBULL), A., 932.
 Motor fuel. See under Fuel.
 "Motyl" (OSTWALD), B., 571.
 Moulds, action of, on gluconic acid (WEHMER; SCHREYER), A., 147.
 foundry (PACZ), (P.), B., 62.
 Moulded articles, production of, from refuse (GROTE), (P.), B., 948.
 Mouse poisons. See under Poisons.
 Mucic acid (HAO and HODINA), A., 49.
*allo*Mucic acid (HAO and HODINA), A., 49.
 Mucin, rate of filtration of solutions of (AMBERG and SAWYER), A., 1205.
 Mucosulphuric acid (LEVENE), A., 87.
 Mullite, formation of, from cyanite, andalusite, and sillimanite (GREIG), B., 128*.
 crystal structure of (WYCKOFF, GREIG, and BOWEN), A., 664.
Muraya exotica, essential oil from the leaves of (PENFOLD and SIMONSEN), B., 804.
Muraya koenigii, essential oil from the leaves of (PENFOLD and SIMONSEN), B., 804.
 Muscle, contraction of (GORTER and GRENDALL), A., 539.
 fatigue of (MEYERHOFF and LOHMANN), A., 427.
 respiration and carbohydrate exchange in (TAKANE), A., 754.
 rôle of phosphates in carbohydrate metabolism of (BEATTIE and MILROY), A., 637.
 extractives of (KAPLANSKY), A., 1167; (BROUDE), A., 1265.
 absence of alanine from hydrolysis products of proteins of (KAPLANSKY), A., 1167.
 albumin from (PIETTRE), A., 84.
 dehydrogenases of (BRUGSCH, HORSTERS, and NARITA; BRUGSCH, HORSTERS, and HARADA), A., 198.
 glycogen in, after removal of liver (BOLLMAN, MANN, and MAGATH), A., 637.
 hexosediphosphatase of (BRUGSCH, CAHEN, and HORSTERS), A., 197.
 β -hydroxybutyric acid in (SNAPPER and GRÜNBAUM), A., 1167.
 insulin complement in (LUNDGAARD and HOLBØLL), A., 1064.
 effect of insulin on dextrose consumption of (BEST), A., 546.
 effect of insulin on lactacidogen in (BEST and MARKS), A., 870.
 action of insulin and, on sugars (HARRIS, LASKER, and RINGER), A., 1180.
 lactic acid in, during tetanus (EMBDEN, HIRSCH-KAUFFMANN, LEHNARTZ, and DEUTICKE), A., 427.
 pigments of (SCHUMM), A., 193, 537.
 distribution of protein nitrogen in (VLADIMIROV), A., 424.
 cardiac, lactic acid content and tension in (REDFIELD and MEDEARIS), A., 1056.
 mammalian, lactic acid in (KATZ and LONG; HINES, KATZ, and LONG), A., 89; (KATZ, KERRIDGE, and LONG), A., 90.
 cat's, distribution of phosphorus and fat in (CUTHBERTSON), A., 198.
 frog's, nitrogen output of, during contraction (RIESSER), A., 319.
 phosphoric acid production in fatigued (EMBDEN and HENTSCHEL; ALTMANN), A., 427.
 non-irritable, phosphates in (EDSALL), A., 861.
 rabbit's, glyoxalase in (DUDLEY), A., 640.
 resting, respiratory quotient of (HIMWICH and CASTLE), A., 539.
 smooth, physiology of (EVANS), A., 194, 1171.
 Muscle, smooth, formation of lactic acid in, in *rigor mortis* (MANGOLD and SCHMITT-KRAHMER), A., 427, 539.
 Muscone, structure of (RUZIOKA), A., 1143.
 Muscular exercise, effect of, on gaseous metabolism in man (FURUSAWA), A., 190.
 effect of, on respiration and lactic acid (FURUSAWA; LONG), A., 190.
 influence of, on metabolism with varied diet (CATHCART and BURNETT), A., 755.
 Musk, constituents of (WALBAUM), A., 840.
 Muskel, and its derivatives (JUSTIN-MUELLER), A., 840.
 Muskone, derivatives of (WALBAUM), A., 840.
 Mussel. See *Mytilus edulis*.
 Musts, clarification of, with mercuric salts (SEMICHON and FLANZY), B., 562.
 Grecian, citric acid in (GALANOS), B., 603.
 Mustard flour, determination of allylthiocarbimide in (COLOMBIER), B., 606.
 Mustard oil, Indian (SUDBOROUGH, WATSON, AYYAR, and MAS-CARENHAS), B., 954.
 Mustard oils. See Thiocarbimides.
 Mutarotation (DARMOIS), A., 133; (RIIBER and MINSAA), A., 1228.
 kinetics of (v. EULER and ÖLANDER), A., 580.
 reaction velocity and equilibrium in (v. EULER and HEDSTRÖM), A., 714.
 of sugars, effect of amphoteric substances on (LOWRY and FAULKNER), A., 148.
 Mutase, animal and plant, action of (GORR and PERLMANN; BINDER-KOTRBA), A., 1059.
 Mutton, effect of cold storage on (CLIFFORD), B., 252.
 freezing of juices of (VICKERY), B., 765.
 Myoalbumin (PIETTRE), A., 84.
 Myochromogen (SCHUMM), A., 193.
 Myohaematin (SCHUMM), A., 193, 537.
 Myophosphates (BRUGSCH and HORSTERS), A., 1055.
Myrica asplenifolia, oil from (BRAUN), B., 964.
 Myricyl alcohol, from carnauba wax (GOTTFRIED and ULZER), B., 713.
 Myristic acid, spreading of, on water (ADAM and JESSOP), A., 348.
 wax esters of (GRÜN, ULBRICH, and KREZIL), A., 597.
 Myrosinase, distinction between sulphatase and (NEUBERG and WAGNER), A., 1060.
Mytilus edulis (mussel), constituents of (DANIEL and DORAN), A., 970.
 respiration of (BRUCE), A., 968.
Myzocephalus, effects of asphyxia and isletectomy on blood-sugar of (SIMPSON), A., 974.
 Myxædema, fat-cholesterol content of blood in (BING and HECKSCHER), A., 89.
Myzomycetæ, constituents of protoplasm of (IVANOV), A., 97.
 composition of the sporangial wall of (KIESEL), A., 204.

N.

- Naphtha, purification of (PETROV), (P.), B., 864.
 solutions, desulphurisation of, by sodium hypochlorite (WOOD, GREENE, and PROVINE), B., 811.
 dry cleaners', industrial requirements for (JACKSON), B., 348.
 β -Naphthylflavanone (TAMBOY, PLATTNER, and ZÄCH), A., 733.
 1-Naphthaldehyde, 2-hydroxy-, action of phenylcarbylamino with (PASSERINI), A., 952.
 2:4-dinitro- (VESELÝ and PASTAK), A., 59.
 α - and β -Naphthaldehydes, 5-bromo-, and their derivatives (RUPE and METZGER), A., 65.
 Naphthalene, constitution of, and its derivatives (FRIES), A., 288.
 absorption spectra of, and its methyl derivatives (DE LASZLO), A., 223.
 fused, infra-red absorption spectrum of (BELL), A., 9.
 solubilities of (WARD), A., 1200.
 equilibrium of *m*-dinitrobenzene with (PUSHIN), A., 1208.
 chlorination of (BROWN and HALOWAX CORP.), (P.), B., 149.
 hydrogenation of ("PRAX" CHEM. VERSUCHS- & VERWERTUNGS-GES.), (P.), B., 433; (SCHROETER), (P.), B., 480*.
 production of hydrogen for (PRUDHOMME), (P.), B., 654.
 oxidation of (GIBBS and DU PONT DE NEMOURS & Co.), (P.), B., 1029.
 sulphonation of (COURTOT and BONNET), A., 605.

- Naphthalene**, desulphurisation of (BUBE), (P.), B., 1007.
 condensation of resorcinol with (GEORGE), A., 1149.
 removal of, from fuel gas (SPERR and KOPFERS Co.), (P.), B., 430; (KOPFERS Co.), (P.), B., 624*.
 derivatives, absorption spectra of (DE LASZLO), A., 775.
 carbazine derivatives, attempted synthesis of (KEHRMANN and BRUNNER), A., 607.
 determination of, in gas in presence of indene (WALTERS), B., 731.
- Naphthalene**, 2-amino-1:6:8-*trinitro*-, and its acetyl derivative (VAN DER KAM), A., 1240.
 bromodinitro-derivatives (VESELY and CHUDOŽILOV), A., 58.
 2-bromo- and 2-chloro-1:6:8-*trinitro*- (VAN DER KAM), A., 1029.
 chloronitro- and nitro-derivatives, action of hydrazine on (MÜLLER; MÜLLER and ZIMMERMANN; MÜLLER and HOFFMANN; MÜLLER and WEISBROD), A., 163.
 1-chloro-2:4-*dinitro*-, action of hydrazine on (MÜLLER and WEISBROD), A., 163.
 1:2-*dihydroxy*-, compounds of molybdates, tungstates, and uranates with (FERNANDES), A., 1036.
 1-nitro-, purification of (WHITTAKER, WOLLASTON, and DU PONT DE NEMOURS & Co.), (P.), B., 578.
 catalytic reduction of (PARRETT and LOWY), A., 512.
 2-nitro-, preparation of, and its 1-halogen derivatives (HODGSON and KILNER), A., 279.
 1:8-*dinitro*-, action of sulphites on (BUCHERER and BARSCH), A., 162.
 1:3:5-*trinitro*-, compound of β -naphthol with (DIMROTH and RUCK), A., 297.
- Naphthalenes**, nitro-, physical properties of (DESVERGNES), A., 605.
- α -Naphthaleneazobenzene-*m*-carboxylic acid (CASSELLA & Co.), (P.), B., 434.
- α -Naphthaleneazobenzene-*m*-carboxylic acids, preparation and reduction of (KALISCHER, MÜLLER, and FRISTER), (P.), B., 735.
- α -Naphthaleneazo-6'-methyl-3'-benzenecarboxylic acid (CASSELLA & Co.), (P.), B., 434.
- Naphthalenecarboxylic acids**. See **Naphthoic acids**.
- Naphthalene-2:7-dicarboxylic acid**, and its nitro-derivatives and their salts and esters (PURGOTTI), A., 951.
- Naphthalene-4-sulphinic acid**, amino-, acetyl derivative (CHILD and SMILES), A., 1244.
- Naphthalenesulphonic acids**, salts, relation between solubility and water of crystallisation of (EPHRAIM and SEGER), A., 18.
- Naphthalene- β -sulphonic acids**, α -nitro-, production of (NELSON and NATIONAL ANILINE & CHEMICAL Co.), (P.), B., 869.
- γ -2-Naphthalenesulphonylglucose diisopropylidene ether (FREUDENBERG, BURKHART, and BRAUN), A., 601.
- Naphthalene-1:4:5:8-tetracarboxylic acid**, and its derivatives (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 7.
- Naphthalic anhydride**, action of diamines on (BISTRZYCKI and RISI), A., 67.
- Naphthalimide**, *N*-amino-, acetyl derivative (BISTRZYCKI and RISI), A., 67.
- α -Naphthalylene-2:3-phenazinoiminazole (SIRCAR and DE), A., 417.
- 1:8-Naphthalylhydrazide, and its diacetyl derivative (BISTRZYCKI and RISI), A., 67.
- α - and β -Naphthalenilides (GIBSON, HARIHARAN, MENON, and SIMONSEN), A., 1154.
- Naphthantraquinone dyes**, vat (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 577.
- Naphthanquinone**, preparation of derivatives of (WAHL, LANTZ, and Soc. ANON. DES MAT. COL. ET PROD. CHIM. DE SAINT-DENIS), (P.), B., 1007*.
- 1:4-Naphthaquinone, 3:6:7-*tribromo*-2-hydroxy-, and its salts (KOHN and SCHWARZ), A., 521.
- Naphthaquinones**, arylamine derivatives of, and their sulphonic acids (WAHL and LANTZ), A., 296.
- α -Naphthaquinone-1-imine-4-anil, 2-hydroxy- (LANTZ and WAHL), A., 617; (GOLDSTEIN and RADOVANOVITCH), A., 1134.
- 1:8-Naphthasnitone, 4-bromo- and 4-chloro- (Soc. CHEM. IND. IN BASLE), (P.), B., 870.
- α - and β -Naphthathiazoles, 2-amino-, and their *tetrabromides* (HUNTER), A., 850.
- α -Naphthathiofuran-1:2-dione, preparation of (Soc. CHEM. IND. IN BASLE), (P.), B., 312.
- Naphthathioxins**, synthesis of (CHILD and SMILES), A., 734.
- Naphthazarin**, constitution of, and its bisdiacetate (DIMROTH and RUCK), A., 297.
- 3-Naphthazide, 2-hydroxy- (FRIES and HASS), A., 289.
- Naphthenic acid**, alkali salts, for laying dust on roads (ALLOHEMIN ALLGEM. CHEM. IND.), (P.), B., 409.
 bismuth salt, oily preparation of, for injections (EICHHOLZ and DALMER), (P.), B., 466*.
 sodium salt, properties of (KAWAKAMI), B., 637.
 cellulose esters (KITA, MAZUME, NAKASHIMA, and SAKURADA), B., 400.
- Naphthenic acids** (NAPHTALI), A., 286; (TANAKA and NAGAI), B., 37, 307, 476, 653.
- α -Naphthoic acid, 2-amino-, and its nuclear substitution products (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 355, 626*.
- β -Naphthoic acid, nitration of (HARRISON and ROYLE), A., 287.
- β -Naphthoic acid, 3-amino-, manufacture of (Soc. CHEM. IND. IN BASLE), (P.), B., 736.
- Naphthoic acids**, hydroxy-. See **Naphtholcarboxylic acids**.
- α - and β -Naphthoic acids, amino- and nitro-, and their salts and derivatives (HARRISON and ROYLE), A., 287.
- α -Naphthol, catalytic oxidation of *p*-phenylenediamine and (WERTHEIMER), A., 582.
- α -Naphthol, 4-amino-, acetyl derivative (ULLMANN), A., 609.
 8-amino-, acetyl and benzoyl derivatives (RAIFORD and CLARKE), A., 517.
 2:4-*dinitro*-, hydrazine salt (MÜLLER and WEISBROD), A., 163.
dithiocyano- (KAUFMANN and OEHNING), A., 393.
- β -Naphthol, sulphonation of (CROSSLEY and SIMPSON), (P.), B., 234.
 flaked (VAN STONE, DEEDS, and SHERWIN-WILLIAMS Co.), (P.), B., 869.
- β -Naphthol, chloro-derivatives (I. G. FARBENIND.), (P.), B., 869.
 1-nitroso-, benzenesulphonyl derivative (EDWARDS), A., 835.
- α - and β -Naphthols, distinction between (LEWISCH), B., 909.
- Naphthols**, and nitro-, α -naphthylurethanes from (FRENCH and WITTEL), A., 830.
- Naphthols**, nitro-, influence of acid character of, on formation of glucosides (GLASER and THALER), A., 608.
- Naphthol AS**, fastness to light of dyeings with (LÖSCHER), B., 662; (KAYSER), B., 784.
 red pigments from (KIELBASINSKI), B., 705.
 dyes, fastness to rubbing and washing of (ROIGER), B., 872.
 dyeing of, on artificial silks (LINT), B., 484.
- Naphthol AS-D**, constitution of (ROWE and LEVIN), B., 311.
- Naphthol AS-TR**, constitution of (ROWE and LEVIN), B., 310.
- Naphthol blue**, preparation of (COBENZL), B., 656.
- 2-Naphthol-3-carboxylic acid, improvement of fastness to light of insoluble dyes from (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 318.
 anilide of, manufacture of (CHEM. FABR. ROHNER PRATTELN), (P.), B., 185.
- 2-Naphthol-3-carboxylic acids, bromo-, chloro-, and hydroxy- (FRIES and HASS), A., 289.
- 2-Naphthol-4-carboxylic acid, constitution of, and its derivatives (LESSER and GAD), A., 168.
- 2-Naphthol-4-carboxylic acid, 1-amino-, -bromo-, and nitroso- (LESSER and GAD), A., 168.
- 2-Naphthol-6-carboxylic acid (ANDRE and GRASSELLI DYESTUFFS CORP.), (P.), B., 869.
- 2-Naphthol-3-carboxylo-*m*-nitroanilide, manufacture of (CHEM. FABR. ROHNER A.-G. PRATTELN), (P.), B., 817.
- 1-Naphthol-3:6-disulphonic acid, 8-amino-. See **H-acid**.
- α -Naphtholglucoside, 4-nitro-, and its tetra-acetyl derivative (GLASER and THALER), A., 608.
- β -Naphthol-1-sulphonic acid, reaction of diazosulphonates from (ROWE, LEVIN, BURNS, DAVIES, and TEPPER), A., 625.
- Naphtholsulphonic acids**, production of (FALL, LEE, and DU PONT DE NEMOURS & Co.), (P.), B., 578.
- Naphtholsulphonic acids**, 1:8-amino-, preparation of (GUBELMANN, TINKER, and NEWPORT Co.), (P.), B., 528.
- α -Naphthonitrile, 5-amino-, benzoyl derivative (RUPE and METZGER), A., 65.
 2-hydroxy- (PASSERINI), A., 726.
- β -Naphthonitrile, 5-bromo- (RUPE and METZGER), A., 65.
- Naphthonitriles**, catalytic reduction of (RUPE and METZGER), A., 65.
- β -Naphthoxadiazole-4-carboxylic acid (LESSER and GAD), A., 168.
- α - and β -Naphthoxypropionic acids, and amino- and nitro-, and their derivatives (FOURNEAU and BALACEANO), A., 288.
- Naphthoylbenzoic acid** (MOIR), A., 403.
- 1'8'-Naphthoylene-4:5-dihydro-1:2-glyoxaline (BISTRZYCKI and RISI), A., 67.
- α - and β -Naphthoylpicolinic acids, and their hydrochlorides and methyl esters (JEHCOTY), A., 304.

- Naphthyl 2'-hydroxynaphthyl 2:1'-sulphide, 4-chloro-1-hydroxy- (LESSER and GAD), A., 168.
 disulphoxide, 4-amino-, acetyl derivative (CHILD and SMILES), A., 1244.
 α -Naphthyl diphenylmethyl sulphide and sulphoxide (ZECHMEISTER and ROM), A., 720.
 ethyl ether, 2:4-dinitro- (MÜLLER and WEISBROD), A., 721.
 methyl ether, 2:4-dibromo- (KOHN and SCHWARZ), A., 521.
 α -Naphthylacetic acid, 2:4-dinitro-, and its ethyl ester (VESELY and PASTAK), A., 59.
 α -Naphthylacetoacetic acid, 2:4-dinitro-, ethyl ester (VESELY and PASTAK), A., 59.
 α -Naphthylamine, catalytic reduction of α -nitronaphthalene to ethyl sulphate (POPELIER), A., 1123.
 β -Naphthylamine, 1:6:8-trinitro- (VAN DER KAM), A., 1030.
 α - and β -Naphthylamines, and their alkyl derivatives, infra-red absorption spectra of (BELL), A., 222.
 α - and β -Naphthylamines, *mono*- and *di*-thiocyano- (KAUFMANN and OENRINO), A., 392.
 Naphthylaminesulphonic acids, manufacture of (EHRHARDT and HERWARD), (P.), B., 736.
 α -Naphthylamine-8- and -5-sulphonic acids, manufacture and separation of (POMA), (P.), B., 185.
 β -Naphthyl- δ -aminobutylamine (FARB. v. BAYER & Co.), (P.), B., 433.
 β -1-Naphthylaminocrotono- α -naphthylamine (GIBSON, HARIHARAN, MENON, and SIMONSEN), A., 1154.
 β -Naphthyl- β -aminoethylamine (FARB. v. BAYER & Co.), (P.), B., 433.
 β -Naphthyl- β -aminoethylaminoethylamine (FARB. v. BAYER & Co.), (P.), B., 433.
 Naphthylaminonaphthathiazoles, and their bromides (HUNTER), A., 81.
 2- α - and - β -Naphthylamino-1:6:8-trinitronaphthalenes (VAN DER KAM), A., 1240.
 Naphthyl aryl ketones, 4-hydroxy- (SOC. CHEM. IND. IN BASLE), (P.), B., 8*.
 α -Naphthylazoisimide, 2:4-dinitro- (MÜLLER and WEISBROD), A., 325.
 NN'- α -Naphthylbenzylguanidine, and its hydrochloride (KLINGNER), A., 945.
 α - and β -Naphthyl benzyl ketones, and their derivatives (RUGGLI and REINERT), A., 391.
 3-Naphthylcarbamie acid, 2-hydroxy-, methyl ester (FRIES and HASS), A., 289.
 α -Naphthylcarbamylcinnaledoximes (BRADY and MCHUGH), A., 69.
 α -Naphthylcarbimide as a reagent for phenols and aromatic amines (FRENCH and WIRTEL), A., 830.
 reactions of, with alcohols (BICKEL and FRENCH), A., 517.
 urethane from ethylene glycol and (JONES and BAINS), A., 156.
 3-Naphthylcarbimide, 2-hydroxy- (FRIES and HASS), A., 289.
 α -Naphthylcyanamide (KLINGNER), A., 946.
 2- β -Naphthyldecahydronaphthalenes, isomeric (GYSIN), A., 389.
 1- α -Naphthyl-2:2-dibenzylethylene glycol (MCKENZIE and DENNLER), A., 834.
 α -Naphthylidibenzylguanidine and its hydrochloride (KLINGNER), A., 945.
 1- α -Naphthyl-2:2-dimethylethylene glycol (MCKENZIE and DENNLER), A., 834.
 1- α -Naphthyl-2:2-diphenylethylene glycol (MCKENZIE and DENNLER), A., 834.
 1:8-Naphthylenediamine-2:4:5-trisulphonic acid (BUCHERER and BARSCH), A., 162.
 α -Naphthyl β -4-ethoxy- α -naphthylethenyl - ketone, 2-hydroxy- (TAMBOR, PLATTNER, and ZÄCH), A., 733.
 2-Naphthyl ethyl ketones, bromohydroxy-, and hydroxy-, and their derivatives (FRIES and SCHIMMELSCHMIDT), A., 294.
 α -Naphthylglycolic acid, and its silver salt and derivatives (MCKENZIE and DENNLER), A., 834.
 1-Naphthylglyoxalmonoanil, 2-hydroxy- (PASSERINI), A., 952.
 α -Naphthylguanidine, and its nitrate (KLINGNER), A., 946.
 1-Naphthyl β -hydroxyvinyl ketone, and its derivatives (BENARY, MEYER, and CHARISIUS), A., 273.
 Naphthylindanylamines, and their hydrochlorides (COURTOT and DONDELINGER), A., 59.
 1-Naphthylmalonic acid, 2:4-dinitro-, ethyl ester (VESELY and PASTAK), A., 59.
 β -Naphthylmethylamine, 1:6:8-trinitro- (VAN DER KAM), A., 1030.
 α -Naphthyl methyl ketone, 2-hydroxy-, reactions of (TAMBOR, PLATTNER, and ZÄCH), A., 733.
 β -Naphthyl methyl ketone, 1:8-dihydroxy-, diacetoborate (DIMROTH), A., 298.
 α - and β -Naphthyl methyl ketones, formation and derivatives of (PFAU and OFNER), A., 837.
 Naphthyl methyl ketones, hydroxy-, and their derivatives (FRIES and SCHIMMELSCHMIDT), A., 294.
 α -Naphthylmethyl methyl ketone, 2:4-dinitro- (VESELY and PASTAK), A., 59.
 1- α -Naphthyl-3-methyl-1:2:4-triazole, 5-hydroxy- (GASTALDI and PRINCIVALLE), A., 1260.
 α -Naphthylmethylxanthrol (CONANT, SMALL, and SLOAN), A., 842.
 N-2-Naphthyl-naphthalamic acid, 1-amino-, and its silver salt (BISTRZYCKI and RISI), A., 67.
 β -Naphthylphosphoric acid, metallic salts (ZETZSCHE and NACHMANN), A., 1242.
 N-2-Naphthylphthalamic acid, 1-amino-, and its silver salt (BISTRZYCKI and RISI), A., 67.
 α -Naphthylpropinene (BERT and DORIER), A., 391.
 β -Naphthylsulphonyl- β -4-nitro-3-hydroxyphenylacrylonitrile (TRÖGER and FROMM), A., 68.
 Naphthylsulphuric acids, potassium salts (BURKHARDT and LAPWORTH), A., 511.
 1- α -Naphthyl-2:3:4:5-tetrahydrobenzene (WEISS and WOLDICH), A., 509.
 1- β -Naphthylthiol-2-naphthol (BROOKER and SMILES), A., 948.
 β -1-Naphthyl- β -2:4:5-trimethoxyphenylpropane (SZÉKI), A., 285.
 Narcosis (VELLIZ), A., 672, 1172.
 changes in blood in (TOMASSON), A., 642.
 Narcotics, influence of, on surface tension (CZANIK), A., 200.
 effect of, on the intestinal action of parasympathetic stimulants (RYDIN), A., 320.
 Narcotine, oxidation of, and its oxide (DRUMMOND and McMILLAN), A., 1263.
 Nasturtium, diastatic activity of (ENGLIS and LUNT), A., 439.
 Neosarphenamine. See Neosalvarsan.
 Neocyanine, a sensitiser for the infra-red (DUNDON, SCHOEN, and BRIGGS), B., 566.
 Neodymium, ultra-violet spectrum of (GARDINER), A., 774.
 adsorption of hydrogen by (SIEVERTS and ROELL), A., 356.
 Neodymium double nitrates with bivalent metals (PRANDTL and DUCRUE), A., 345.
 sesquioxide, crystal structure of (ZACHARIASEN), A., 1195.
 sodium sulphates (ZAMBONINI and CAROBBI), A., 255.
 Neo-glucose (IWASAKI), A., 1279.
 Neolactobionic acid (KUNZ and HUDSON), A., 1127.
 Neolactose, and its acetates (KUNZ and HUDSON), A., 941.
 structure of, and its osazone (KUNZ and HUDSON), A., 1127.
 Neon, occurrence of, in vacuum tubes (BALY and RIDING), A., 1191.
 spectrum of (MEISSNER), A., 766; (M. R. and R. C. JOHNSON), A., 985.
 wave-length standards for (MONK), A., 650, 1185.
 under different conditions of excitation (MONK), A., 650.
 spark spectra of (L. and E. BLOCH and DÉJARDIN), A., 766, 874.
 secondary spark spectrum of (L. and E. BLOCH and DÉJARDIN; DÉJARDIN), A., 329.
 ultra-violet spectrum of (LYMAN and SAUNDERS), A., 445.
 ultra-violet spark spectra of helium and (DORGEOLO and ARBINK), A., 766.
 excitation potentials of the spectrum of (MOHLER), A., 988.
 intensity of lines of, in glow lamps (HEINRICH), A., 874.
 intermittent glow discharge of (PENNING), A., 445.
 critical potential for the K level of (HOLWÉCK), A., 104.
 sparking potentials of, between aluminium electrodes (VAN VOORHIS), A., 1072.
 photo-electric ionisation of (MOHLER), A., 877.
 metastable states of (DORGEOLO), A., 101.
 molecular field of (LENNARD-JONES and COOK), A., 888.
 isotherms of (HOLBORN and OTTO), A., 1000.
 recovery of, from the air (GES. F. LINDE'S EISMASCHINEN), (P.), B., 322.
 gas thermometry with (HEUSE), A., 786.
 Neopine, constitution of, and its derivatives (VAN DUIN, ROBINSON, and SMITH), A., 745.
 Neosalvarsan (neocarsphenamine), manufacture of (KOBEL), B., 217.
 examination of (ELVOVE), B., 27.
 unfit for therapeutical application, recognition of (KIRCHER and v. RUPPERT), B., 461.

- Neosalvarsan, analysis of (FREEDMAN), B., 767.
 Nepetella oil (ROMEO and GIUFFRÈ), B., 107.
 Nephelometer (DOLD), A., 378.
 Nephritis, excretion of ammonia and acids in (VAN SLYKE, LINDER, HILLER, LEITER, and MCINTOSH), A., 859.
 proteins of blood plasma in (FAIR and SWANSON), A., 1271.
 proteins of urine in (WELKER, THOMAS, and HEKTOEN), A., 971.
 Nephrolithiasis, glycerol treatment of (HANSEN and KAMM), A., 859.
 Nernst effect (HALL), A., 114.
 Nerves, irritability of, with reference to blood-sugar (GREISHEIMER), A., 1051.
 effect of parathyroid extracts on irritability of (BERMAN), A., 326.
 Nerve fibres, excretion of carbon dioxide by (PARKER), A., 190.
 Nervonic acid (KLENK), A., 1124.
 Nervous system, central, carbohydrate metabolism of (UCHIDA), A., 427.
 vegetative, relation between calcium and potassium ions in serum and (LEILÉS), A., 316.
 Neurine bromides (RENSHAW and WARE), A., 155.
 Neurosyphilis, chemotherapy of (LOEVENHART and THOMAS), A., 1274.
 Neutral salt action in concentrated solutions (GRUBE and SCHMID), A., 474.
 Newtonite, identity of alunite with (FOSHAG), A., 709.
 Nickel, refining of (LELLEP and INTERNATIONAL NICKEL Co.), (P.), B., 1018.
 malleability and metallography of (MERICA and WALTEBERG), B., 366*.
 absorption and series spectra of (NARAYAN and RAO), A., 1070.
 pressure shift lines in the arc spectrum of (BARNES), A., 986.
 X-ray spectrum of (THORÆUS), A., 1186.
 under-water spark spectrum of (BUFFAM and IRETON), A., 1.
 effect of temperature on spectral emissivity of (WORTHING), A., 892.
 critical potentials of (CHU; THOMAS), A., 1073.
 magnetisation of (WEISS and FORRER), A., 339.
 atomic magnet for (FORRER), A., 670.
 magnetic moment of (STONER), A., 1189.
 magnetic properties of single crystals of (SUCKSMITH and POTTER), A., 1196.
 magnetostriction of (FORRER), A., 1189.
 magnetostriction and magnetic hysteresis in (VEDENSKI and SIMANOV), A., 997.
 and its alloys with iron, magnetostriction in (McKEEHAN and CIOFFI), A., 891; (McKEEHAN), A., 892.
 secondary emission from, after positive ion bombardment (KLEIN), A., 105.
 electrical resistance of (MEISSNER), A., 1086.
 critical potential of (THOMAS), A., 104.
 effect of heat on contact potential difference between copper and (SCHRADER), A., 1196.
 Hall effect in films of (PEACOCK), A., 565.
 molecules, electrical symmetry of (PERRIER and BOREL), A., A., 115, 230.
 specific heat of (SUCKSMITH and POTTER), A., 893.
 pure, refractories for melting (JORDAN, PETERSON, and PHELPS), B., 951.
 flow of, under stress (LODE), A., 666.
 and its oxide, evaporation of water from (BHATNAGAR and BHATIA), A., 900.
 permeability of, to hydrogen (LOMBARD), A., 349.
 and its oxide, adsorption of ethylene and hydrogen by (LAZIER and ADKINS), A., 467.
 and its oxide, as catalysts in combination of carbon monoxide and oxygen (BONE and ANDREW), A., 250.
 electrolytic deposition of (SAXON), A., 135; (OLLARD and METROPOLITAN-VICKERS ELECTRICAL Co.), (P.), B., 590.
 and its alloys (MADSENELL CORP.), (P.), B., 163.
 on aluminium (LANGBEIN-PFANHAUSER-WERKE), (P.), B., 197.
 precipitation of, by zinc from alcoholic solutions (MÜLLER, SCHIMKE, and FARMAKIDES), A., 1016.
 articles plated with (BECKET and ELECTRO-METALLURGICAL Co.), (P.), B., 63.
 metals coated with (MADSEN and MADSENELL CORP.), (P.), B., 97.
 electroplating of iron with (KING and HANSON & VAN WINKLE Co.), (P.), B., 132.
 recovery of (LEENHARDT and METAL & THERMIT CORP.), (P.), B., 792.
 Nickel, recovery of, from copper-nickel matte (HYBINETTE and ANGLO-CANADIAN MINING & REFINING Co.), (P.), B., 547.
 from ores (HISSING), (P.), B., 675.
 from iron ores (KICHLIN and BETHLEHEM STEEL Co.), (P.), B., 755.
 and its alloys with iron, recovery of, from rolling-mill scale (STERN), (P.), B., 330.
 removal of, from amalgams (RUSSELL, EVANS, and ROWELL), A., 911.
 and its alloys, cementation of, by tin (GUILLET), B., 588.
 membranes. See under Membranes.
 catalytic, preparation of (RANEY), (P.), B., 81.
 Röntgen-ray structure of (CLARK, ASBURY, and WICK), A., 12.
 heat of adsorption of hydrogen on (FRYLING), A., 800.
 electrolytic, structure of (CLARK and FRÖLICH), B., 131.
 pyrophoric, adsorption of hydrogen and carbon dioxide by (NIKITIN), A., 673.
 rolled, crystal structure of (KONOBEJEVSKI), A., 1195.
 Nickel alloys (DE BATS and DE BATS METALS Co.), (P.), B., 283; (MERIOA and INTERNAT. NICKEL Co.), (P.), B., 369.
 production and working of (WESTERN ELECTRIC Co.), (P.), B., 17.
 specific heat of (KAWAKAMI), B., 671.
 with alkaline-earth metals (BOVING and WESTERN ELECTRIC Co.), (P.), B., 133.
 with chromium (COCHRANE and U.S. INDUSTRIAL ALCOHOL Co.), (P.), B., 63.
 paramagnetic, dilatometric anomaly of (CHEVENARD), B., 546.
 with copper (GRAHAM and U.S. INDUSTRIAL ALCOHOL Co.), (P.), B., 63; (LEHR and U.S. INDUSTRIAL ALCOHOL Co.), (P.), B., 283.
 mechanical properties of, at high temperatures (TARSELL and BRADLEY), B., 280, 792*.
 with gold (FRAENKEL and STERN), A., 344.
 with iron (GRENET), B., 132*; (WHITE and WESTERN ELECTRIC Co.), (P.), B., 635*.
 magnetic properties of (TSCHERNING), B., 58.
 lattice constant and density of (OSAWA), A., 564.
 Widmanstätten structure in (KASÉ), B., 277.
 physico-chemical equilibrium of (PESCHARD), B., 58; (GRENET), B., 443.
 magnetic (WESTERN ELECTRIC Co.), (P.), B., 244.
 non-oxidising (SPITZLEY, THOMPSON, and ALLOYS FOUNDRY Co.), (P.), B., 673.
 reversible, resistivity and thermo-electric power of (CHEVENARD), B., 588.
 See also Permalloy.
 Nickel salts, catalytic hydrogenation in presence of (v. BRAUN and BAYER), A., 172, 729, 1253.
 Nickel antimonide. See Breithauptite.
 arsenide. See Nickelin.
 chlorate and perchlorate, hydrazinates of (FRIEDERICH and VERVOORST), B., 933.
 chloride, action of oxygen with heated (JELLINEK and RUDAT), A., 909.
 fluoride, crystal structure of (FERRARI), A., 664.
 hydrides (WEICHSSELFELDER and THIEDE), A., 372.
 hydroxide, crystal structure of (NATTA), A., 228.
 nitrite (DUVAL), A., 697.
 monoxide, preparation of (LE BLANC and SACHSE), A., 373.
 equilibrium of the reduction of, by hydrogen (PEASE and COOK), A., 684.
 peroxide as catalyst (CHIRNOAGA), A., 916.
 oxide, black (LE BLANC and SACHSE), A., 698.
 alkali phosphites (ROSENHEIM, FROMMER, GLÄSER, and HÄNDLER), A., 696.
 sulphate, manufacture of (KOHLLINS), (P.), B., 156.
 crystalline, production of (AGDE), (P.), B., 915.
 equilibrium of aluminium sulphate, water, and (CAVEN and MITCHELL), A., 26.
 equilibrium of potassium sulphate, water, and (CAVEN and JOHNSTON), A., 1210.
 ammonium sulphate, paramagnetism of (JACKSON), A., 1197.
 sulphide sols (THORNE and PATES), A., 350.
 vanadate (EPHRAIM and BECK), A., 371.
 Nickel organic compounds with ethylenediaminobisacetylacetone (MORGAN and SMITH), A., 600.
 with triaminopropane (MANN and POPE), A., 1234.
 with $\beta\beta'\beta''$ -triaminotriethylamine (MANN and POPE), A., 387.

Nickel organic compounds:—

- with $\gamma\gamma'\gamma''$ -triaminotripropylamino (MANN and POPE), A., 387.
- Nickel carbonyl, structure of (BLANCHARD and GILLILAND), A., 561.
- action of Grignard reagents on (GILLILAND and BLANCHARD), A., 603.
- molybdates with organic bases (DI CAPUA), A., 304.
- Nickelocyanides, complex compounds of, in presence of hydroxylamine (JOB and SAMUEL), A., 373.
- Nickel detection, determination, and separation:—
 - detection of (TEST and SCOLLES), A., 40.
 - detection of, colorimetrically (DENIGÈS), A., 930.
 - detection of traces of, in hardened fats (WAGENAAR), B., 678.
 - determination of, colorimetrically (ROLLET), A., 930.
 - determination of, electrolytically, in nickel steel (MOLDENHAUER), B., 588.
 - separation of copper and (GIERTSEN and KRISTIANSEN), A., 370.
 - separation of, from copper-nickel mattes (INTERNAT. NICKEL Co. and STANLEY), (P.), B., 921.
- Nickel-copper matte, refining of (PEEK, TORELL, and NAT. TRUST Co.), (P.), B., 245; (LELLEP and INTERNAT. NICKEL Co.), (P.), B., 1018.
- Nickel matte, removal of iron from (BOGITCH), B., 634.
- Nickel ores, pyrrhotite, recovery of iron, sulphur, nickel, and copper from (MABEE and SMALL), B., 671.
- Nickel plating baths, determination of hydrogen-ions in, with the quinhydrone electrode (PARKER and GREER), B., 246.
- Nickelin, structure of (DE JONG), A., 460.
- Nicotine, rotatory dispersion of (LOWRY and SINGH), A., 110.
- removal of, from tobacco (SCHLOSING), (P.), B., 465, 512; (SMITH), (P.), B., 465.
- manufacture of solid products containing (CHEM. FABR. FORM. SCHERING), (P.), B., 893.
- asymmetric nitrogen atoms in derivatives of (LOWRY), A., 338.
- bromoaurate and compound with tetrabromoethane (FULTON), A., 305.
- pyridino alkyl iodides of, and 2-chloro- (KARRER and TAKAHASHI), A., 626.
- determination of, by method of Ulex (MACH and SINDLINGER), B., 253.
- determination of, in tobacco (RUNDSHAGEN), B., 214; (YOUNG), B., 644.
- Nicotinic acid from yeast (VICKERY), A., 978.
- β -diethylaminoethyl and γ -diethylaminopropyl esters, hydrochlorides of (INGERSOLL and ROBBINS), A., 1158.
- Nicotinic acids, chloride hydrochlorides of (SPÄTH and SPITZER), A., 958.
- isoNicotinyl chloride, aldehyde from (ROJAHN and SCHULTEN), A., 842.
- Nicotones (KARRER and TAKAHASHI), A., 626.
- Nile-blue, isomerides of, and their salts and derivatives (KEHRMANN, GRILLET, and BORGEAUD), A., 1262.
- Niobium, spectrum of (MEGGERS and KIESS), A., 651.
- Niobium pentoxide, action of, with carbon tetrachloride (RUFF and THOMAS), A., 1222.
- Niobium detection, determination, and separation:—
 - detection and determination of, in presence of tantalum (RUFF and THOMAS), A., 1222.
 - separation of tantalum and (SEARS), B., 282.
- Niella, accumulation of brilliant-cresyl-blue in sap of, in presence of ammonia (IRWIN), A., 204.
- toxic action of copper salts on (COOK), A., 1058.
- penetration of dyes into (IRWIN), A., 647.
- exit of dyes from cells of (IRWIN), A., 1179.
- absorption and concentration of halogens in cells of (HOAGLAND, HIBBARD, and DAVIS), A., 1179.
- Niton. See Radon.
- Nitrates. See under Nitrogen.
- β -Nitro- β -nitrophenylpropionic acids, α -nitro-, ethyl esters (VAN DER LEE), A., 1245.
- Nitratotetraminecobaltic molybdate. See under Cobalt bases.
- Nitrides. See under Nitrogen.
- Nitrification in oxidising media (PARISI), B., 762.
- in soils (BATHAM), B., 70.
- Nitriles, formation of, from oximes (PASSERINI), A., 726.
- preparation of (KORCZYŃSKI and FANDRICH), A., 1037.
- manufacture of (SCHMIDT), (P.), B., 216, 646*.
- catalytic reduction of (CAROTHERS and JONES), A., 161.

- Nitriles, action of magnesium organic compounds with (MALTHUS), A., 54; (BRUYLANTS), A., 825; (GEURDEN), A., 1025; (DE COSTER), A., 1027.
- detoxication of (ADELINE, CERECEDO, and SHERWIN), A., 1272.
- aliphatic, alkylation of (RAMART), A., 717.
- unsaturated, salts of (HOUBEN and FRANKUCH), A., 951, 1247.
- Nitriles, α -amino-, action of magnesium organic compounds on (VELGHE), A., 1044.
- isoNitriles. See Carbylamines.
- Nitrites. See under Nitrogen.
- Nitro-alcohols. See under Alcohols.
- Nitrocellulose. See Cellulose nitrate.
- Nitro-compounds, physical properties of (DESVERGNES), A., 1240.
- reduction of, to azoxy-compounds by magnesium and ammonium chloride (ZEHNMEISTER and ROM), A., 720.
- reduction of, with sodium amalgam (PELLEGRINI), B., 576.
- alkaline reduction of, with zinc dust (ISMAILSKI and KOLPENSKI), A., 248, 827.
- reactions of, with alkaloids (NAVARRO), A., 965.
- as desensitisers (LÜPPO-CRAMER), B., 646.
- aromatic, solubility of, in aqueous sulphuric acid (BURR), A., 1207.
- equilibria of, with azo- and azoxy-benzenes (GIUA and GUASTELLA; GIUA and REGGIANI), A., 61.
- reduction of (BAMBERGER, ORMEROD, and REBER), A., 513.
- action of sulphites on (BUCHERER and BARSCH), A., 162.
- action of thiosemicarbazide on (GIUA and PETRONIO), A., 62.
- determination of, by reduction with titanous chloride (KOLTHOFF and ROBINSON), A., 420.
- determination of nitrogen in (ELEK and SOBOTKA), A., 632.
- Nitro-cotton, apparent viscosity of solutions of, in various solvents (McBAIN, HARVEY, and SMITH), B., 482.
- Nitrocyanide-compounds, aromatic, reduction of (RUPE and VOGLER), A., 63.
- Nitro-esters, preparation of (BURKE, KRAMER, and DU PONT DE NEMOURS & Co.), (P.), B., 995.
- Nitrogen in the sun (SAHA), A., 221.
- oxygen-free, preparation of (KAUTSKY and THIELE), A., 699.
- pure, production of (METZGER and AIR REDUCTION Co.), (P.), B., 708.
- from combustion gases (CARO and FRANK), (P.), B., 157.
- valency of (BLANCHARD), A., 662.
- in quaternary ammonium compounds (HAGER and MARVEL), A., 1232.
- spectra of, and their excitation (DUFFENDACK and DUNCAN), A., 1; (DUNCAN), A., 549; (KNESER), A., 653.
- spectrum of, in presence of neon (CAMERON), A., 333.
- spectrum of the afterglow of (JOHNSON and JENKINS), A., 991.
- absorption spectrum of (SPONER), A., 1192.
- arc spectra of, and its mixtures with hydrogen and mercury (KWEI), A., 7.
- band spectrum of (BIRGE; SPONER), A., 8.
- band spectra of carbon monoxide and (NAGAOKA), A., 107.
- negative band spectrum of (WITMER), A., 107.
- infra-red spectrum of (McLENNAN, SMITH, and PETERS), A., 107.
- low-frequency spectrum of (DAUVILLIER), A., 1185.
- ultra-violet spectrum of (BOWEN and INGRAM), A., 1070.
- phosphorescence of (McLENNAN, IRETON, and THOMPSON), A., 1081.
- duration of light emission from (KERSCHBAUM), A., 652.
- Döpler effect in canal rays of (KREFFT), A., 218.
- ionisation potentials of, on iron and other metals (KLASTIAKOWSKY), A., 1188.
- low-voltage arc oscillations in, and in its mixtures with hydrogen (ECKART, KWEI, and COMPTON), A., 1185.
- electric discharge in mixtures of argon and (CLARKSON), A., 107.
- ionisation of, by impact of electrons (HOGNESS and LUNN), A., 104; (KONDRATJEV), A., 989.
- by excited mercury atoms (COMPTON and DUFFENDACK), A., 3.
- active (RAYLEIGH; WILLEY; DUFFIEUX), A., 336; (WILLEY and RIDEAL), A., 893; (WILLEY), A., 1213.
- spectrum of cyanogen in the after-glow of (JEVONS), A., 992.
- energy of (FOOTE, RUARK, and CHENAULT; LUDLAM and EASSON), A., 1081.
- crystalline (VORLÄNDER and KEESOM), A., 1082.
- molecular field of (LENNARD-JONES and COOK), A., 888.
- specific heats of (BRINKWORTH), A., 668.
- liquid, latent heat of vaporisation of, and its mixtures with oxygen (DANA), A., 568.

- Nitrogen, solid, emission spectra of** (VEGARD), A., 213.
 luminescence of, and its mixtures with argon and neon (VEGARD), A., 660.
 gas thermometry with (HEUSE), A., 786.
 and its mixtures with hydrogen, isotherms of (VERSCHOYLE), A., 894.
 law of corresponding states applied to (VAN URK), A., 570.
 high vapour pressure of (PORTER and PERRY), A., 1000.
 molecules, energy level of (BIRGE), A., 104.
 adsorption of, by haemoglobin (COXANT and SCOTT), A., 750.
 high-pressure, for ammonia synthesis (FENO-GES. FÜR ENERGIE-VERWERTUNG and MEWES), (P.), B., 744.
 preparation of mixtures of hydrogen and (HUMPHREY and SYNTHETIC AMMONIA & NITRATES), (P.), B., 89; (CLANCY and NITROGEN CORP.), (P.), B., 822.
 production of mixtures of oxygen and (EDWIN), (P.), B., 630.
 action of mixtures of oxygen and, on some elements (MONTE-MARTINI and LOSANA), A., 1216.
 explosion of mixtures of oxygen, ethyl bromide, and (JORISSEN and ONGKIEHONG), A., 690.
 action of, on uranium carbide (HEUSLER), A., 909.
 fixation, materials of construction for (THOMPSON), B., 873.
 in high-tension arc (TARTAR and PERKINS), B., 485.
 by means of barium carbonate and coal in an electric furnace (SCHWEITZER), B., 272.
 influence of added substances on, by mixtures of barium carbonate and carbon (ASKENASY and BRING), B., 978.
 as sodium cyanide (GUERNSEY, YEE, BRAHAM, and SHERMAN), B., 358.
 by soils (VINOGRADSKI), B., 415.
 capacity of soils for (VINOGRADSKI), B., 558.
 in Bombay Deccan soils (SAHASRABUDDHE and DAJI), B., 249.
 by yeast (FULMER and CHRISTENSEN), A., 96.
 in *Leguminosae* and *Graminae* (RIFFEL and LUDWIG), A., 439.
 assimilation of, by non-legumes grown in association with legumes (STALLINGS), B., 601.
 comparative activities of different forms of, in urea fertilisers (BRIOUX and PIEN), B., 250.
 available, influence of, on fermentation of cellulose in soil (ANDERSON), B., 457.
 availability of, for crops (SINGLETON), B., 842.
 in garbage tankage and urea (PRINCE and WINSOR), B., 458.
 equilibrium of, in growing animals (WEISER), A., 862.
 effect of diet on retention of, during growth (TERROINE and MENDLER), A., 428.
 effect of iodides on the partition of (GRABFIELD and PRENTISS), A., 755.
 effect of calcium salts on excretion of, in man (BARATH and v. GYURKOVITCH), A., 863.
Nitrogen compounds, production of (MATTHEWS), (P.), B., 665.
 spectra from excitation of (KNESER), A., 658.
 catalytic action of (MOUREU and DUFRAISSE), A., 581.
 * **Nitrides, manufacture of** (JANISTYN), (P.), B., 744.
 refractory, conversion of, into an easily decomposed form (FRIEDERICH), (P.), B., 191.
Nitrogen monoxide (nitrous oxide), synthesis of (CHAPMAN, GOODMAN, and SHEPHERD), A., 811.
 thermal decomposition of (BRINER, MEINER, and ROTHEN), A., 685, 924.
 reduction of (NICHOLS and DERBIGNY), A., 691.
 explosion of mixtures of, with air and ether or chloroform (JORISSEN and ONGKIEHONG), A., 1205.
 interaction of hydrogen and, on the surface of gold (HUTCHISON and HINSHELWOOD), A., 807.
 dioxide (*nitric oxide*), formation of, at high temperatures (BRINER, BONER, and ROTHEN), A., 916.
 production of, by electrical methods (ISLAND), (P.), B., 592.
 energy levels of molecules of (SPONER), A., 110.
 compressibility and decomposition of (BRINER, BIEDERMANN, and ROTHEN), A., 16.
 decomposition of (BRINER, MEINER, and ROTHEN), A., 924.
 catalytic decomposition of, on platinum (GREEN and HINSHELWOOD), A., 915.
 interaction of hydrogen and (HINSHELWOOD and GREEN), A., 579.
 oxidation of (VER. CHEM. & MET. PRODUKTION), (P.), B., 125.
 effect of moisture and paraffin surface on reaction of oxygen with (HASCHE), A., 1106.
 manganese compound with (MANCHOT and SCHMID), A., 1219.
- Nitrogen dioxide, compounds of platinum salts with** (MANCHOT and WALDMÜLLER), A., 1219.
 per- or tetra-oxide, production of, from calcium nitrate (L'AZOTE FRANÇAIS), (P.), B., 322.
 for bleaching flour (STACEY), (P.), B., 339.
 dried, vapour pressure of (SMITS, DE LIEFDE, SWART, and CLAASSEN), A., 1206.
 addition of, to olefines (KLINGSTEDT), A., 44.
 as a diazotising agent (HOUSTON and JOHNSON), A., 164.
 determination of, by means of the photo-electric cell (H. and A. COPAUX), B., 125.
 pentoxide, photochemical decomposition of, with reference to infra-red radiation (DANIELS; TAYLOR), A., 485.
 thermal decomposition of, at low pressures (HIRST and RIDEAL), A., 32.
 tetra- and pent-oxides, infra-red absorption spectra of (DANIELS), A., 108.
 oxides, apparatus for electrical formation of (ISLAND), (P.), B., 835*.
 diluted, concentration of (JOHNSON and NORSK HYDRO-ELEKTRISK KVAELSTOFABT), (P.), B., 1014.
 action of, with arsenious and sulphurous acids in presence of sulphuric acid (BAILEY), B., 628.
Nitric acid, preparation of (KLEMENC and GROSS), A., 807.
 concentrated, manufacture of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 155.
 from waste acids (LENTZ and DU PONT DE NEMOURS & Co.), (P.), B., 707.
 manufacture of, by oxidation of ammonia (CEDERBERG), (P.), B., 359.
 from nitrous gases (CARO and FRANK), (P.), B., 405.
 safety in (KERSHAW), B., 220.
 distillation of (ÖMAN), A., 235; (RAMBERG), A., 236.
 concentration of (KALTENBACH), (P.), B., 236; (BÜSCHING), (P.), B., 666*.
 partial pressures of aqueous solutions of (KLEMENC and NAGEL), A., 1000.
 action of, on metals (KLEMENC), A., 482; (JOSS), A., 1110.
 in presence of catalysts (PALIT and DHAR), A., 915.
 rate of removal of, from aromatic compounds (RYAN and GLYNN), A., 606.
 sensitiveness of diphenylamine as reagent for (KRAUER), B., 537.
Nitrates, formation of, from oxidation of combined nitrogen, and their reduction to cyanides (HOFMANN, LINNMANN, GALOTTI, HAGENEST, and HOFMANN), A., 370.
 crystalline, birefringence of (RAMAN), A., 994.
 effect of liming on content of, in soils (REMESOV), B., 415.
 accumulation of, in soil under a straw mulch (ALBRECHT and ULLAND), B., 25.
 colour reaction of saponin with (MITCHELL), B., 438.
 detection of (BLOM), A., 375.
 determination of (KÜRSCHNER and SCHARER), B., 155.
 determination of, colorimetrically (HAASE), B., 582.
 determination of, microchemically (ROGOZIŃSKI), A., 813.
 determination of, in tissues (KOHN-ABREST and KAWAKIBI), A., 1283.
 determination of, in water and sewage (BURKE), B., 389.
Nitrons acid, action of stannous chloride on (RASCHIO), A., 1016.
Nitrites, preparation of (DUVAL), A., 697.
 manufacture of, from nitrous gases (BÄHR), (P.), B., 487.
 oxidation of (KLEMENC and GROSS), A., 807.
 action of, on growth of plants (FEHÉR and VAGI), A., 1066.
 determination of, colorimetrically (BERNOULLI), A., 1116.
 thio- (RHEINBOLDT), A., 819.
Nitrogen organic compounds, spectrochemistry of (v. AUWERS and KRAUL), A., 109; (v. AUWERS and ERNST), A., 994.
 crystallography of (JAEGER), A., 890.
 anti-oxygenic action of (MOUREU, DUFRAISSE, and BADOCHIE), A., 1031.
 preservation of, in liquid manures (KUCHLER and BODLER), (P.), B., 417.
Nitrogen determination:—
 determination of (HIMMERICH), A., 38.
 determination of, by Kjeldahl's method (ANDERSEN and JENSEN), A., 375.
 determination of, splash-head for the Kjeldahl method of (LOWE), A., 38.
 determination of, by the micro-Kjeldahl method (FUCHS), A., 1115.

Nitrogen determination:—

- determination of, microchemically (KULTJUGUN and GUBAREV), A., 327; (KULTJUGUN and IVANOVSKI), A., 444.
determination of, with copper powder (KÜRSCHNER and SCHARRE), A., 490.
determination of, in nitro-compounds (ELEK and SOBOTKA), A., 632.
determination of, in organic compounds (BERL and BURKHARDT), A., 749; (JARAMILLO), A., 1163.
determination of, in organic compounds by Kjeldahl's method (KÜRSCHNER), A., 702.
determination of, in proteins (PLIMMER and ROSEDALE), A., 313.
determination of, in serum, by Abderhalden's reactions (KOMM), A., 860.
determination of, in urine by Kjeldahl's method without distillation (POHORECKA-LELESZ), A., 212.
Nitrogen-hydrogen linking, infra-red absorption characteristic of (SALANT), A., 453.
Nitroglycerin. See Glyceryl nitrate.
Nitroprussic acid, sodium salt, colour reactions of phenols with (EKKERT and WINKLER), A., 1033.
Nitroso-compounds, reactions of, with alkaloids (NAVARRO), A., 1048.
with unsaturated compounds (ALESSANDRI), A., 287, 1038.
bactericidal action of (COOPER and FORSTNER), B., 518.
Nitrosulphones from aromatic o-hydroxycarboxysulphonic acids (BRITISH DYESTUFFS CORP. and SAUNDERS), (P.), B., 233.
Nitrosyl chloride, velocity of formation of, in an electric field (HENGLEIN), A., 690.
Nitrosylethylmercaptide. See Ethyl thionitrite.
Nitrosylmercaptides (RHEINBOLDT; LECHER and SEIFKEN), A., 819.
Nitrosylselenic acid, hydroxy- (MEYER and GULBINS), A., 488.
Nitrosylsulphuric acid (ELLIOTT, KLEIST, WILKINS, WEBB, and PEPPERELL), A., 811.
Nitroxymethylal, nitro- (HOUBEN and PFANKUCH), A., 268.
Nomenclature, alchemical (HOLMYARD), A., 265.
n-Nonadecoylacetone, and its copper salt (MORGAN and HOLMES), A., 148.
n-Nonaldehyde 2:4-dinitrophenylhydrazones (BRADY and ELSMIE), A., 394.
Nonane, action of anhydrous aluminium chloride on (COX), A., 267.
Nonane, 8 ϵ -dibromo- (KIRRMANN), A., 817.
Nonane- α -dicarboxylic acid, esters (CHUIT), A., 499.
cycloNonanone, and its semicarbazone, from sebacic acid (RUZICKA and BRUGGER), A., 726.
Nonan- β -on- γ -ol, and its semicarbazone (NICOLLE), A., 383.
 Δ^8 -Nonene (KIRRMANN), A., 817.
Nonic acid, thallos salt (WALTER), A., 712.
n-Nonylacetone, and its copper salt (MORGAN and HOLMES), A., 148.
Nopinene, hydration of (AUSTERWEIL), A., 619.
action of hydrochloric acid on (ACHMATOWICZ), A., 731.
as technical raw material (AUSTERWEIL), B., 253.
halogeno-compounds of, and its distinction from pinene (GASPOULOS), A., 1148.
separation of, from mixtures with pinene (AUSTERWEIL), (P.), B., 900.
Norboldine, and its hydriodide (WARNAT), A., 185.
Nor-m-hemipinic acid methyl ethyl ether, and its barium salt (v. BRUCHHAUSEN and SAWAY), A., 185.
Novocaine solutions (HOOPER and METZ LABORATORIES), (P.), B., 172.
distinction between cocaine and (GERHARDT), A., 853.
Nozzles, for production of artificial filaments (WALKER), (P.), B., 661; (LEVY), (P.), B., 740.
Nuclear numbers (DE BARROS), A., 7.
Nuclease, activity of, in blood (PINCUSSEN and COELHO), A., 94.
Nuclei, properties of membranes of (ROBERTSON), A., 972.
formation of, in supersaturated media (VOLMER and WEBER), A., 676.
Nucleic acid, structure of (LEVENE and SIMMS), A., 1236.
effect of ionisation on optical rotation of derivatives of (LEVENE, SIMMS, and BASS), A., 1265.
Nucleic acids in cancer tissue (WILHEIM), A., 89.
Nuts, bleaching of (CHRISTIE and CALIFORNIA WALNUT GROWERS' Assoc.), (P.), B., 106.
Nutrient solutions, for use with sand cultures (PRIANISHNIKOV and DOMONTOVITCH), B., 641.

Nutrition (BERCZELLER and WASTL), B., 992.

- under varying oxygen pressures (DRASTICH), A., 972.
value of inorganic compounds in (FAIRHALL), A., 1273.
effect of cystine and mineral elements in (WOODS), A., 197.
value of potassium salts in (MILLER), A., 1273.
of animals, minerals in (ORR), A., 429.
- O.**
- Oak, autumnal migration of nitrogen in** (COMBES), A., 647.
Oakwood extract, insoluble matter in (PAYLOVITSCH), B., 375.
Oats, influence of potassium chlorate on germination of (STROBEL and SCHARRE), A., 1066.
absorption of sodium nitrate by (APPLETON and HELMS), A., 871.
manuring of, with sodium nitrate (KUHNERT), B., 959.
tolerance of, for alkali salts in Idaho soil (NEIDIG and MAGNUSON), B., 207.
Sussex ground, digestibility of fibre in (HALNAN), B., 896.
Oatmeal, value of proteins of, in diet (HARTWELL), A., 974.
Oat straw, effect of, on fertility of soils (THOMAS and HARPER), B., 640.
Obesity, fat-cholesterol content of blood in (BING and HECKSCHER), A., 89.
experimental, fat and glycogen in tissues in (FOSTER and BENNINGHOVEN), A., 1271.
Ochna pulchra, constituents of berries of (FACER), A., 981.
Ochre, red. See Iron oxide.
Ochres, extraction of manganese from (SOUVIRON), (P.), B., 889.
Ocimene, constitution of (ENKLAAR), A., 619.
Octa-acetyl-lactobionitrile (ZEMPLÉN), A., 1229.
Octadecanoic acid, $\lambda\mu$ -dibromo-, and its ethyl ester (GRÜN and CZERNY), A., 269.
cycloOctadecanone, and its semicarbazone (RUZICKA, STOLL, and SCHINZ), A., 615.
Octadecenoic acids, and bromo-, and their ethyl esters (GRÜN and CZERNY), A., 269.
 Δ^8 -Octadecinenic acid (GRÜN and CZERNY), A., 269.
n-Octadecoylacetone, and its copper salt (MORGAN and HOLMES), A., 148.
Octadiene (KIRRMANN), A., 817.
Octahydroacridine, and its derivatives (PERKIN and SEDGWICK), A., 410.
1:2:3:4:5:6:7:8-Octahydroanthranol, and its derivatives, and amino- (v. BRAUN and BAYER), A., 173.
Octahydroanthraquinol (v. BRAUN and BAYER), A., 173.
and its acetate (SKITA), A., 174.
Octahydroanthraquinol, 2-amino-, hydrochloride (SKITA), A., 174.
Octahydroanthraquinone (v. BRAUN and BAYER), A., 173.
dibromide (SKITA), A., 174.
Octahydroanthraquinone, 2-amino- (SKITA), A., 174.
Octahydrochamazulene (RUZICKA and RUDOLPH), A., 299.
Octahydrodianhydrostrophanthidin, and its acetyl derivative (WINDAUS, REVEREY, and SCHWIEGER), A., 73.
Octahydroguaiazulene (RUZICKA and RUDOLPH), A., 299.
Octahydrophenanthraquinone (v. BRAUN and BAYER), A., 173; (SKITA), A., 174.
Octahydrophenanthrene, aminohydroxy- (v. BRAUN and BAYER), A., 173.
Octahydrophenanthrol, and its derivatives (v. BRAUN and BAYER), A., 173.
Octamethylporphin, and its bromides and complex copper and iron compounds (FISCHER, WALACH, and STEINMETZ), A., 1261.
Octamethyluranose (ZEMPLÉN and BRAUN), A., 1229.
Octan- β -ol, α -hydroxylamino-, oxalate (SCHMIDT, ASCHERL, and MAYER), A., 45.
Octan- β -one, γ -hydroxy-, and its semicarbazone (PRILESCHAJEV), A., 383.
cycloOctanone, preparation of, from azelaic acid (RUZICKA and BRUGGER), A., 615.
 Δ^8 -Octene, β -chloro-, oxidation of, by perbenzoic acid (PRILESCHAJEV), A., 383.
cycloOctene, cyano- (RUZICKA and BRUGGER), A., 727.
Octene oxide, β -chloro- (PRILESCHAJEV), A., 383.
Octic acid, thallos salt (WALTER), A., 712.
n-Octylacetone, and its copper salt (MORGAN and HOLMES), A., 148.
Octylresorcinol (DOHME, COX, and MILLER), A., 838.

- cyclo*Octylcarbinol (RUZICKA and BRUGGER), A., 727.
*cyclo*Octylcarboxylic acid, and its amide (RUZICKA and BRUGGER), A., 727.
*cyclo*Octylmethylamine, and its benzoyl derivative (RUZICKA and BRUGGER), A., 727.
 Oxyresorcinol (DOHME, COX, and MILLER), A., 838.
 Odour and molecular symmetry (v. BRAUN and TEUFFERT), A., 65; (v. BRAUN and HAENSEL), A., 1142.
 Estrous cycle, hormone of (LAQUEUR, HART, DE JONGH, and WIJSENBEK), A., 546.
 Offals, slaughterhouse, working up of (STEINMANN), (P.), B., 848.
 apparatus for reduction of, to grease and tankage (TAYLOR and BROKAMP), (P.), B., 171.
 Ohm's law, deviations from (COMPTON), A., 1086.
 Oil or Oils, theories of origin of (CLARK), B., 731.
 extraction of (WHITON), (P.), B., 677.
 apparatus for (MACGREGOR and SCOTT & Co.), (P.), B., 923.
 volatile, extraction of, from solids (CLINE), (P.), B., 699.
 extraction of, from palm fruit, etc. (DICKINSON, BRIMLEY, and NIGERIAN PRODUCTS), (P.), B., 20.
 from blubber (CHEM. ENGINEERING CO., SPENSLEY, and BATTERSBY), (P.), B., 20.
 apparatus for, from blubber and other cellular tissues (KRUPP GRUSONWERK), (P.), B., 200*.
 from whale blubber and flesh, fish products, etc. (HOLTER and THUNE), (P.), B., 448.
 from fermentation of *n*-butyl alcohol (MARVEL and BRODERICK), B., 104.
 from coal (HEYN and DUNKEL), B., 809.
 recovery of, from fish, vegetable refuse, etc. (HILLER), (P.), B., 507*.
 from marine animals (HOLTER and THUNE), (P.), B., 594.
 from oleaginous materials (DAVID and FÉLIZAT), (P.), B., 1020*.
 from oil sands (PRITCHARD), (P.), B., 147; (COLLIER), (P.), B., 524.
 from shales (JURA OELSCHIEFER WERKE), (P.), B., 147.
 presses for, with disintegrating means (ZANDER), (P.), B., 1020.
 presses for expressing, from materials (CARVER), (P.), B., 795.
 purification of (PRUTZMAN and GEN. PETROLEUM CORP.), (P.), B., 41; (METALLBANK & METALLURGISCHE GES. and GENSECKE), (P.), B., 66; (FORAY), (P.), B., 594; (KONSTAS and SOC. ANON. IND. DES MATIÈRES GRASSES ET SAVONS "VELOS"), (P.), B., 713.
 adsorption agent for (RIERI-WERK RICHTER), (P.), B., 295.
 purification and deacidification of (KUNEROLWERKE KUNER & SOHN), (P.), B., 500.
 purification and decolorisation of (N.V. JURGENS' VEREEN. FABR.), (P.), B., 449.
 purifying and decolorising agent for (KAUFFMAN and PRODUCERS & REFINERS CORP.), (P.), B., 575.
 refining of (TRUMBLE), (P.), B., 700; (GEPHART and COCOA PRODUCTS CO. OF AMERICA), (P.), B., 714; (STOLL), (P.), B., 780.
 colloidal reactions in (LEIMDÖRFER), B., 758.
 removal of acid tar from (PRUTZMAN, BARTON, and GEN. PETROLEUM CORP.), (P.), B., 41.
 removal of free fatty acids and other impurities from (LEVER BROS., CRAIG, and SHAWFIELD), (P.), B., 20.
 apparatus for separation of, from liquids (MORISON), (P.), B., 81*.
 separation of, from solid vegetable substances (HOLTER and THUNE), (P.), B., 713.
 separation of glycerides from (ALLGEM. GES. F. CHEM. IND.), (P.), B., 332.
 separation of, from water (GREEN, OGDEN, and UNTHANK), (P.), B., 113; (LOZAI), (P.), B., 525.
 apparatus for (GREEN and OGDEN), (P.), B., 82*.
 extraction of mixtures of fats and, with alcohol (KUBIERSCHKY), (P.), B., 287.
 fluorescence of, in ultra-violet light (CRONER), B., 836.
 evolution of hydrogen peroxide from, on exposure to light (STUTZ, NELSON, and SCHMUTZ), B., 20.
 increase in viscosity of, subjected to a silent discharge (BECKER), B., 860.
 spreading of, on water (LANDT and VOLMER), A., 1094.
 drying of, occurrence and detection of polymerisation in (EIBNER and MUNZERT), B., 888.
 dehydration of (OWEN; EGLOFF, BENNER, and UNIVERSAL OIL PRODUCTS CO.; EGLOFF, MORRELL, and UNIVERSAL OIL PRODUCTS CO.), (P.), B., 6.
 Oil or Oils, crude, dehydration of (BARRY), (P.), B., 814.
 distillation of (WALLACE), (P.), B., 40; (HIRT), (P.), B., 40, 1006*; (FRASER), (P.), B., 41; (PYZEL and SIMPLEX REFINING CO.), (P.), B., 42*; (WADSWORTH and PIERCE PETROLEUM CORP.), (P.), B., 352; (MELHARDT), (P.), B., 449; (BELL and SINCLAIR REFINING CO.), (P.), B., 478.
 apparatus for (CONTINENTALE A.-G. F. CHEMIE & REICHVERKEHRSBANKE), (P.), B., 594; (LEE), (P.), B., 780.
 crude, distillation plant for (HANSON and VANDERVORT), (P.), B., 864.
 continuous distillation of (BLÜMNER), (P.), B., 261*.
 destructive distillation of (BLÜMNER), (P.), B., 865.
 fractional distillation and condensation of (CLARK, HOWARD, and STANDARD DEVELOPMENT CO.), (P.), B., 864.
 distillation of volatile substances from (N.V. JURGENS MARGARINEFABR.), (P.), B., 448.
 improvement of (McAFEE and GULF REFINING CO.), (P.), B., 431.
 treatment of (CHERRY and C. & C. DEVELOPING CO.), (P.), B., 700.
 apparatus for (LEWIS and ATLANTIC REFINING CO.), (P.), B., 814; (EGLOFF, BENNER, and UNIVERSAL OIL PRODUCTS CO.), (P.), B., 863.
 treated, preparation of (SEDLACZEK), B., 1020.
 de-acidification of (BOLLMANN), (P.), B., 987.
 decolorisation of (PRUTZMAN, v. BIBRA, and GEN. PETROLEUM CORP.), (P.), B., 41.
 decolorisation and stabilisation of (PRUTZMAN and GEN. PETROLEUM CORP.), (P.), B., 1006*.
 decolorisation of (LAMY-TORRILHON), (P.), B., 99, 714*; (BRASH), B., 923.
 saponifiable, theory of steam deodorisation of (BRASH), B., 500.
 deodorisation and clarification of (FORAY), (P.), B., 987.
 splitting and deodorisation of (RIEMER), (P.), B., 200.
 desulphurisation of (MASSENET), (P.), B., 231; (ACHESON), (P.), B., 352.
 soluble, preparation of (FRIZELL, STAGNER, and UNION OIL CO. OF CALIFORNIA), (P.), B., 575.
 highly viscous, production of (ZOLLINGER), (P.), B., 21.
 relation of physical and chemical properties of, to lubricating value (PARSONS and TAYLOR), B., 620.
 lubricating efficiencies and physical and chemical properties of (DOVER), B., 571.
 decomposition of (SCHRAUTH), (P.), B., 449*.
 cracking of (WYANT), (P.), B., 120; (BELL and SINCLAIR REFINING CO.), (P.), B., 397; (ALEXANDER; VAN DE WATER, SUNDERMAN, and PETROLEUM LABORATORIES), (P.), B., 430; (HOLMES, MANLEY, and TEXAS CO.), (P.), B., 527*.
 apparatus for (DIETERLE), (P.), B., 814.
 removal of solid deposits from (HUFF), (P.), B., 309*.
 apparatus for hydrogenation and cracking of (ANDERSON), (P.), B., 1004.
 cracked, improvement of (OBERSCHLESISCHE KOKSWERKE & CHEM. FABR., RUSSIG, and SUPAN), (P.), B., 231.
 apparatus for conversion of (ADAMS and TEXAS CO.), (P.), B., 864.
 electrochemical treatment of unsaturated hydrocarbons from cracking of (THOMAS), (P.), B., 623.
 hydrogenation of (INT. BERGIN-CO.), (P.), B., 38; (N.V. ALGEM. NORIT MAATSCHAPPIJ), (P.), B., 333; (RUBEN), (P.), B., 553*.
 hydrolysis of (SCHRAUTH), (P.), B., 287.
 oxidation of (EISENSTEIN and SCHICHT), (P.), B., 202; (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 987.
 atmospheric oxidation of (SMITH and WOOD), B., 713.
 effect of ozone on (DOVER and APPLEBY), B., 199.
 used in electrical apparatus, preservation of (MASCHINENFABR. OERLIKON), (P.), B., 446.
 saponifiable, bleaching action of hydrogen peroxide on (STIEFEL), B., 758.
 unsaponifiable matter of, and its biological significance (CHANNON; CHANNON and MARRIAN), A., 638.
 unsaponifiable, detection of, in fats (HOLDE and SORGAS), B., 593.
 addition of vitamin-A to (AARHUS OLIEFABR. and HANSEN), (P.), B., 140.
 neutralisation and bleaching of (BATAILLE), (P.), B., 448.
 origin and detection of rancidity in (PRITZKER and JUNGHUNZ), B., 1020.

- Oil or Oils, determination of colour intensity of (WILBORN), B., 136; (FONROBERT and PALLAUF), B., 201, 450, 760.
 crude, acid value and impure acid value of (HIDAKA), B., 199.
 determination of the formolite value of (NASTJUKOV), B., 860.
 determination of iodine value of (STOCK), B., 20; (MARGOSCHES and NEUFELD), B., 414.
 detection of vitamin-A and -D in (v. EULER, MYRBÄCK, and KARLSSON), A., 1181.
 apparatus for determination of water in (SCHAPIRO), B., 971.
 Oils, animal, extraction of (LAABS and ALLBRIGHT-NELL Co.), (P.), B., 449.
 purification of (VIDAL), (P.), B., 21.
 marine (ANDRÉ and CANAL), A., 758; (ANDRÉ and FRANÇOIS), B., 247; (TSUJIMOTO), B., 636.
 splitting and deodorisation of (RIEMER), (P.), B., 200.
 Tortelli-Jaffé reaction for (AUERBACH), B., 923.
 detection of unsaponifiable matter in (HOLDE and GORGAS), B., 98.
 rapid determination of iodine value of (MARGOSCHES, FRIEDMANN, and FUCHS), B., 199.
 See also *Todarus sagittatus*.
 cutting (HUGHES, and SUN OIL Co.), (P.), B., 478.
 drying, chemistry of (ELLIS), B., 678.
 composition of, in relation to primary and secondary bromine or iodine values (VAUBEL), B., 887.
 treatment of (TABER), (P.), B., 760.
 solvent which increases the drying capacity of (LUGEON), (P.), B., 248.
 rapid oxidation of (TARADOIRE), B., 135, 924.
 crystalline bromides from (TOMS), B., 794.
 standardisation of (EIBNER and REITER), B., 593.
 edible, refining of (FORAY), (P.), B., 795.
 Oils, essential, extraction of, from grain, roots, and sweet almonds (GATTEFOSSÉ and Soc. FRANÇ. PROD. AROMATIQUES), (P.), B., 217.
 manufacture of, from cacti (SINCLAIR), (P.), B., 252.
 Australian, germicidal values of (PENFOLD and GRANT), B., 804.
 of Caucasasia and of the Crimea (RUTOVSKI, VINOGRADOVA, and KONDRATSKI; RUTOVSKI, VINOGRADOVA, and KOLOTOV; RUTOVSKI, VINOGRADOVA, and KOSLOV), B., 340.
 German (TREFF, RITTER, and WITTRISCH), B., 850.
 Indian, constituents of (RAU and SIMONSEN), A., 1246.
 from Irish-grown plants (REILLY, DRUMM, and BOYLE), B., 462.
 effect of, on nitrogen excretion in rats (BIJLSMA), A., 863.
 determination of, in spices (GRIEBEL), B., 850.
 determination of alcohols and phenols in, by means of magnesium methyl iodide (ZEREVITINOV), B., 720.
 Oils, essential. See also :—
Andropogon citratus (lemon grass).
 Anise oil.
Baccharis guianensis.
Bifora radians.
Boronia citriodora.
 Cade oil.
 Camomile oil.
 Camphor oil.
 Chenopodium oil.
Cinnamomum massoi, and *parthenoxylon*.
Collinsonia anisata.
Curcuma aromatica.
Dianthus caryophyllus.
Eriostemon myoporoides.
Erythroxylon monogynum.
 Eucalyptus oil.
Genista tinctoria.
 Jasmine oil.
Kämpferia galanga.
Laurus nobilis.
 Lavender oil.
Leptospermum scoparium (manuka).
Liquidambar orientalis.
Lupinus luteus.
Melaleuca alternifolia and *linariifolia*.
Mentha crispa, *piparita* and *pulegium*.
Murraya exotica and *kænigii*.
Myrica asplenifolia.
 Nepotella oil.
 Orange flower oil.
 Origanum oil.
 Pennyroyal oil.
 Peppermint oil.
Picrostima atriplicifolia.
Pseudotsuga Douglasii.
Salvia sclarea and *spinosia*.
Satureja hortensis.
 Star-anise oil.
Thymus capitatus, *herbarona* and *vulgaris*.
Valeriana officinalis.
Viola roscia.
 Wormseed oil.
 Oils, fatty, polymerisation in drying and thickening of (AUER), B., 888.
 vacuum distillation of (HOLDE and GORGAS), B., 836.
 effect of "blowing" on composition of (THOMSON), B., 552.
 unsaturated solid isoacids in hydrogenation of (UENO), B., 200; (UENO and KUZE), B., 637.
 new method of determination of composition of (KAUFMANN), B., 165.
 Oils, fatty. See also :—
Aleurites.
 Arachis oil.
 Castor oil.
Centrophorus lusitanicus.
 Chaunmoogra oil.
 Chrysalis oil.
 Coconut oil.
 Cod liver oil.
 Conifer seed oil.
 Cottonseed oil.
Datura alba.
 Dolphin oil.
 Duck oil.
 Dugong oil.
 Fish oils.
 Gorli oil.
 Herring oil.
 "Hotaru-ika" oil.
 Jamba oil.
Johannesia princeps.
 Kavatel oil.
 Kraboa oil.
 "Kuromoji" oil.
 Lamprey oil.
 Limo seed oil.
 Linseed oil.
 Mustard oil.
 Olive oil.
 Palm-kernel oil.
Pongamia glabra.
 Rape oil.
 Ray liver oil.
Salvadora oleoides.
 Sardine oil.
 Shark liver oil.
 Soya-bean oil.
 Sperm oil.
 Sturgeon liver oil.
 Sunflower oil.
 "Tora-fuga" liver oil.
Tropaeolum majus.
 "Tsuu" oil.
 Tung oil.
 Whale oil.
 Oils, heavy, cracking of (LONGHI; UNIVERSAL OIL PRODUCTS Co.), (P.), B., 525.
 emulsification of (BILLINGHAME), (P.), B., 655.
 Oils, hydrocarbon, purification of (DOWNS; MORRELL and UNIVERSAL OIL PRODUCTS Co.), (P.), B., 231; (REMFERY and DUNSTAN), (P.), B., 352; (TRENT and TRENT PROCESS Co.), (P.), B., 701*; (DEUTSCHE ERBÖL-A.-G. and SCHICK; RIEDEL A.-G.), (P.), B., 864.
 refining of (CROSS), (P.), B., 120*; (WILES and STANDARD OIL Co.), (P.), B., 623.
 removal of sulphur and its compounds from (WENDT and STANDARD OIL Co.), (P.), B., 814.
 treatment of (EGLOFF, BENNER, and UNIVERSAL OIL PRODUCTS Co.), (P.), B., 231; (DUBBS and UNIVERSAL OIL PRODUCTS Co.), (P.), B., 1005.
 distillation of (HAZELDINE), (P.), B., 526; (DUBBS and UNIVERSAL OIL PRODUCTS Co.), (P.), B., 574; (CHENOT; ALEXANDER), (P.), B., 623.
 fractionation of (CROZIER), (P.), B., 479*.
 cracking of (ADAMS), (P.), B., 183; (DUBBS and UNIVERSAL OIL PRODUCTS Co.), (P.), B., 230, 814; (WOLF; KOONTZ and COSDEN & Co.; PRIMROSE and POWER SPECIALTY Co.), (P.), B., 263; (SINCLAIR REFINING Co., HERTHEL, and PELZER; BERRY; SEIGLE), (P.), B., 352; (WELLMAN and KANSAS CITY GASOLINE Co.), (P.), B., 431, 622; (HANCOCK and BOYLE; ISOM and SINCLAIR REFINING Co.), (P.), B., 431; (MCCOMB; EGLOFF), (P.), B., 526; (MELAMID; POWER SPECIALTY Co.; KING and STANDARD OIL Co.; STUART, MIDDLETON, and CLARK; COAST and DOHERTY RESEARCH Co.; PRITCHARD, HENDERSON, and GULF REFINING Co.), (P.), B., 622; (ADAMS and TEXAS Co.), (P.), B., 623; (HOWARD and STANDARD DEVELOPMENT Co.), (P.), B., 700; (MATLOCK and GASOLINE CORP.), (P.), B., 733; (DANCKWARDT), (P.), B., 863; (DOHERTY and DOHERTY RESEARCH Co.; HERTHEL and SINCLAIR REFINING Co.; EGLOFF, BENNER, and UNIVERSAL OIL PRODUCTS Co.), (P.), B., 941; (PAGE and FABYAN; CUDDY), (P.), B., 1005; (FARAGHER, GRUSE, GARNER, and GULF REFINING Co.), (P.), B., 1006*.
 catalytic cracking of (PRICHARD, HENDERSON, and GULF REFINING Co.; McAFEE and GULF REFINING Co.), (P.), B., 431.
 bleaching, cracking, and desulphurisation of (H. & H. REINOLD), (P.), B., 231.
 cracking and hydrogenation of (WALLACE), (P.), B., 779.
 conversion of, into light hydrocarbons (LOUKINSKY and ROB-KOFF), (P.), B., 814.
 heavy, conversion of, into light hydrocarbon oils (LAMPLOUGH and RATOCZYN EXTENDED OIL FIELDS, LTD.), (P.), B., 972.

- Oils, hydrocarbon, high-boiling, conversion of, into low-boiling oils (SWEENEY and STANDARD OIL Co.), (P.), B., 701.
- Oils, insulating (STÄGER), B., 331.
- stable (FRANK), (P.), B., 147.
- Japanese crude, variation of specific gravity of (IKI), B., 810.
- light, preparation of, from coal, lignite, and mineral, shale or tar oils (SCHULTZ), (P.), B., 779.
- production of, from low-temperature tar or heavy oils (ZECHE STINNES), (P.), B., 576.
- as fuel for internal-combustion engines (BRUTZKUS), B., 654.
- recovery of (OBERLE and SCHOFIELD), (P.), B., 1005.
- from emulsions (DIETZSCH), (P.), B., 702.
- of low boiling point, manufacture of (SWEENEY and STANDARD OIL Co.), (P.), B., 700; (MI and ISOMURA), (P.), B., 701.
- lubricating. See Lubricating oils.
- Oils, mineral, from coal (NIELSEN), B., 652.
- free from water, production of (HANSGIRG), (P.), B., 574.
- purification of (FABER, HANNA, CHAPPELL, and STANDARD OIL Co.), B., 41; (SCHWARZ), (P.), B., 41*.
- treatment and refining of (ALLINSON and DOHERTY RESEARCH Co.), (P.), B., 863.
- refining of (WATERMAN), B., 259; (STINNES-RIEBECK MONTAN- & OELWERKE), (P.), B., 263; (HOFMANN and DUNKEL), (P.), B., 264; (RIEBECK'SCHE MONTANWERKE), (P.), B., 574.
- treatment of alkaline waste products from refining of (SUDFELT & Co. and GELBRE), (P.), B., 526.
- filters for (J. V. and C. C. APABLASA), (P.), B., 176.
- counter-current washing of (SMITH), (P.), B., 80.
- decolourisation of, by adsorbents (ROGERS, GRIMM, and LEMON), B., 259.
- transport and distillation of (HEYL), (P.), B., 699.
- distillation of (GRANGER, MARILLER, and PRACHE), (P.), B., 264*.
- in a high vacuum (STEINSCHNEIDER), B., 259.
- distillation of lubricating oils from (SIMPLEX REFINING Co. and KRAMER), (P.), B., 908.
- stills for (NEWTON), (P.), B., 183.
- cracking of (TRENT), (P.), B., 732.
- apparatus for (LINTON and LINTON GASOLINE PROCESS Co.), (P.), B., 863.
- catalysts for (GRISARD), (P.), B., 231.
- cracking and separation of (V. L. OIL PROCESSES and LUCAS), (P.), B., 183.
- decomposition of, by the electric arc (EVERS), B., 307.
- specific heats of (FORTSCH and WHITMAN), B., 810.
- effect of heat on (EVERS), B., 307.
- adsorption of asphalt from, by hydrosilicates (HERBST), B., 523.
- autoxidation of, and determination of tar value (MARCUSON and BAUERSCHÄFER), B., 427.
- desulphurisation of (JOHANSEN and ATLANTIC REFINING Co.), (P.), B., 701.
- conversion of heavy, into lighter products (DE DAMPIERRE), (P.), B., 147.
- subjected to oxidising processes, micrographic analysis of (VANGHELOVITCH), B., 307.
- vacuum assay distillation test for (PETERKIN and FERRIS), B., 84.
- dark, determination of hard asphalt in (HOLDE), B., 1003.
- determination of sulphur in (WAGNER), B., 75.
- determination of water in (REINER), B., 146; (BOLLER), B., 777.
- See also Diesel oil and Petroleum.
- Oils, transformer, examination of, after exposure to light (HEYDEN and TYPKKE), B., 860.
- dielectric breaking stress of (BARY), B., 793.
- testing of (MUSATTI and PICHETTO), B., 65; (STÄGER), B., 117.
- transformer and switch (I. G. FARBENIND., THODE, and BENISCHKE), (P.), B., 712.
- See also Transformer oils.
- vegetable, and their fatty acids, oxidation and polymerisation of (PETROV and DANILOVITSCH), B., 372.
- removal of phosphatides from (BOLLMANN), (P.), B., 136.
- improving the durability of (BOLLMAN), (P.), B., 1020.
- prevention of rancidity in, used in plastic compositions (SCHARFF and NOBEL'S EXPLOSIVES Co.), (P.), B., 887.
- containing glycerides of erucic acid (SUDBOROUGH, WATSON, and AYYAR), B., 954.
- role of, in fertility and lactation (SURE), A., 981.
- Oils, vegetable, analysis of mixtures of (JANSSEN and SCHUT), B., 987.
- waste, separation of constituents of (CONTINENTALE A.-G. FÜR CHEMIE und TERN), (P.), B., 1020.
- Oil-cake, determination of fat in (ZANDER), B., 835.
- Oil films, micrography of (STERN), B., 638, 796.
- Oil fuel. See under Fuel.
- Oil-gas. See under Gas.
- Oil industry, problems of (MORGAN), B., 373.
- Oil paintings. See under Paintings.
- Oil-sand. See under Sand.
- Oil-shale. See under Shale.
- Oily materials, recovery of constituents from (DAVID and FÉLIZAT), (P.), B., 987.
- Okaite (STANSFIELD), A., 708.
- Oleandrin (WINDAUS and WESTPHAL), A., 1146.
- Olefines, addition of mercuric salts to (SANDBORN and MARVEL), A., 747.
- formation of nitrosates by (KLINGSTEDT), A., 44.
- n*-*24*-Olefines, preparation of (KIRRMANN), A., 934.
- Olefine oxides, manufacture of (BURDICK and CARBIDE & CARBON CHEMICALS CORP.), (P.), B., 692*.
- Oleic acid, adsorption of (BARTSCH), A., 572.
- oxidation of, and its derivatives (HILDITCH), A., 938.
- ammonium salt, hydrodynamic behaviour of (ANDRADE and LEWIS), A., 470.
- viscosity of solutions of (HATSCHKE and JANE), A., 240; (HATSCHKE), A., 470.
- bismuth salt, preparation of (HOFFMANN-LA ROCHE & Co.), (P.), B., 77.
- toxicity and excretion of (LEONARD), A., 975.
- sodium salt, conductivity and surface tension of (BHATNAGAR, PRASAD, and SINGH), A., 477.
- interfacial tension between benzene and aqueous solutions of (HARKINS and ZOLLMAN), A., 239.
- thallous salt (CHRISTIE and MENZIES), A., 56.
- zinc salt, preparation of (STERKERS and BREDEAU), A., 792.
- iso*Oleic acid (VESELY and MAJTL), A., 47.
- Oleic substitute, production of (RIEBECK'SCHE MONTANWERKE A.-G.), (P.), B., 887.
- Oleo-oil, vitamin-A in (HOAGLAND and SNIDER), B., 509.
- Oleoresins, distillation of (CHEVALIER, BOURCET, and REGNAULT), (P.), B., 502.
- Oleostearin, vitamin-A in (HOAGLAND and SNIDER), B., 509.
- Oleum. See Sulphuric acid, fuming, under Sulphur.
- Oleum hyocyanum, preparation and valuation of (VALENTIN), B., 896.
- Olive oil (TRAETTA-MOSCA), B., 677.
- production of, in Tunis (ROUSSEAU), B., 953.
- refining of (FORAY), (P.), B., 795.
- composition of (TAUFEL and SARRIA), B., 332.
- free acids of (CERIOTTI and SANGUINETTI), B., 757.
- detection of (SACCARDI), B., 677.
- obtained by extraction with solvents, detection of (FACHINI), B., 592.
- detection of oils containing sulphur in (FACHINI), B., 987.
- Olivine, crystal structure of (BRAGG and BROWN), A., 995.
- Onium compounds, physiological activity of (RENSHAW and WARE), A., 155; (RENSHAW, BACON, and ROBLER), A., 497; (RENSHAW and BACON), A., 805; (BENCOWITZ and RENSCHAW), A., 1027; (RENSHAW and HOTCHKISS), A., 1232.
- Onofrite, crystal structure of (HARTWIG), A., 664.
- Oocytin, properties and composition of (CLARK and SHARP), A., 205.
- Opiandilene-*dl*-piperitone, and its calcium salt (EARL and READ), A., 1040.
- Opium, Indian, ash constituents of (ANNETT and BOSE), B., 74.
- alleged deterioration of, on keeping (DOTT), B., 419.
- powdered, loss of morphine in, by keeping (ABRAHAM and RAE), B., 766.
- determination of alkaloids, sugar, and oily substances in (RAKSHIT), B., 998.
- determination of morphine in (MACHIGUCHI and SHIRONO), B., 27.
- Opsopyrrole, synthesis of (FISCHER and HALBIG), A., 1256.
- Opsopyrrolooxycarboxylic acid, and its derivative with diazobenzene-sulphonic acid (FISCHER and TREIBS), A., 1256.
- Optical activity and polarity of substituent groups (RULE and SMITH), A., 457; (RULE and NUMBERS), A., 1038.
- potential (READ and McMAHON), A., 1024.

- Optical constants** (DARWIN), A., 7.
 inversion, Walden's (WARD), A., 805.
 instruments for the infra-red and ultra-violet (LEISS), A., 1185.
 rotation and chemical constitution (SINGH and PURI), A., 457.
 and configuration of optically active compounds (CLOUGH), A., 111.
 sensitisation (KÖGEL and STEIGMANN; SCHMIDT), B., 772.
- Optically active compounds**, relation between optical rotation and configuration of (CLOUGH), A., 111, 937.
 determination of the Kerr constants of (ILBERG), A., 337.
- Orange flower oil** (ELZE), B., 803.
- Orange juice**, sterilisation and clarification of (McCOMB and HEYMAN), (P.), B., 606.
 pectic substance in (NORRIS), A., 1183.
 dried, vitamin-C in (HUMPHREY), A., 1065.
 effect of, in diet of growing children (CHANEY and BLUNT), A., 437.
- Orehil** in substitute for black currant juice (FRANÇOIS and SEGUIN), B., 382, 510*.
- Oreinol**, α -naphthylurethane from (FRENCH and WIRTEL), A., 830.
- Ores**, deposition of, from aqueous suspensions or slimes (TRAUBE), (P.), B., 283.
 dressing of (TIMMS, PARSONS, CARNOCHAN, and GODARD), B., 672.
 mill for grinding of (BEYERLE), (P.), B., 345.
 concentration of (LEWIS and MINERALS SEPARATION NORTH AMER. CORP.), (P.), B., 18, 444; (ELLIS FLOTATION CO.), (P.), B., 549*; (TUCKER and MINERALS SEPARATION, LTD.), (P.), B., 711; (STEVENS), (P.), B., 833; (EMERY), (P.), B., 1018*.
 by float flotation (MINERALS SEPARATION, LTD., KELLER, and LEWIS), (P.), B., 18.
 oxidised, concentration of, by flotation (CROSSDALE), (P.), B., 330.
 metallising concentrates of (CRIST and TRIUMPH STEEL CO.), (P.), B., 984.
 flotation of (MORSE and COMP. DU BOLES), (P.), B., 674; (BAMAG-MEQUIN A.-G.), (P.), B., 756.
 separation of (ELLIS and ELLIS FLOTATION CO.), (P.), B., 331*.
 electrostatic separation of (HERZ), (P.), B., 18.
 wet magnetic separation of (ÜLLRICH and KRUPP GRUSONWERK), (P.), B., 370*.
 roasting of (FASSOTTE and COMP. MÉTAUX OVERFELT-LOMMEL), (P.), B., 97; (MILBAUER and TUCEK), B., 495.
 rotary kilns for (VICKERS and PARKER), (P.), B., 409.
 apparatus for roasting or sintering (METALLBANK & METALLURGISCHE GES.), (P.), B., 674.
 sintering and melting of (ROMBACHER HÜTTENWERKE and BROWN), (P.), B., 134.
 treatment of (McCOURT), (P.), B., 163; (TERRY and METALS RECOVERY CO.), (P.), B., 711.
 apparatus for (CLEVINGER and RESEARCH CORP.), (P.), B., 63.
 and of other metallurgical products (DURANT and RHODES), (P.), B., 17.
 with liquids (RAMÉN), (P.), B., 495.
 complex, treatment of (KRUPP GRUSONWERK), (P.), B., 833.
 agglomeration of (COUSIN), B., 60; (SCHNEIDER & CIE), B., 61.
 for smelting (BRÜCK, KRETSCHEL & Co., and KIPPE), (P.), B., 754.
 smelting of (CHURCH and UNITED VERDE EXTENSION MINING CO.; PRINCE, DOUGLAS, and UNITED VERDE EXTENSION MINING CO.), (P.), B., 17; (SOC. PROD. MÉTALLURGIQUES CONSTANT-BRUZAC), (P.), B., 549.
 reduction of (CONSTANT and BRUZAC), (P.), B., 711*; (LEONARZ), (P.), B., 755.
 furnace for (WINKELMAN), (P.), B., 674.
 and production of cement (FERGUSON), (P.), B., 134*.
 sulphating of (READ, COOLBAUGH, and COMPLEX ORES RECOVERIES CO.), (P.), B., 496*.
 recovery of metals and sulphur from (SMAILL), (P.), B., 756.
 fuel-containing, roasting and sintering of (METALLBANK & METALLURGISCHE GES.), (P.), B., 754.
 mineral, concentration of, by flotation (WHITWORTH), (P.), B., 755.
 oxide, treatment of (HAGLUND), (P.), B., 164*.
 reduction of (DYER), (P.), B., 370*.
 sulphide, genesis of (FREEMAN; SPURR), A., 494.
 treatment of (DE KEYSER), (P.), B., 163.
 sulphur-containing, roasting of (ROSS), (P.), B., 754.
- Ore concentrates**, copper-palladium-gold-silver, analysis of (DAVIS), B., 589.
- Organs**, animal, working up of (EICHELBAUM), (P.), B., 853.
 autolysis of (KAPLANSKY), A., 542.
 of animals and plants, extraction of (MASCHINENBAU-ANSTALT HUMBOLDT), (P.), B., 805.
 female generative, preparation and purification of extracts of (SOC. CHEM. IND. IN BASLE), (P.), B., 965.
 foetal, breakdown of proteins in (KANNER), A., 752.
 human or animal, separation of lipoids from (ZELLNER), (P.), B., 341.
 micro-determination of ions in (PINCUSSEN and CRONHEIM), A., 764.
- Organic anions**, flocculating power of (HERRMANN), A., 1204.
- Organic compounds**, syntheses of, by radiant energy (DE FAZI), A., 835.
 refractivity and structure of (FAJANS and KNORR), A., 336.
 infra-red absorption spectra of (ELLIS), A., 454.
 luminescence of, on exposure to X-rays (MALLET), A., 885.
 depolarisation of light by (CABANNES and GRANIER), A., 559.
 isomeric, determination of configuration of (LANGSETH), A., 116.
 oxidation-reduction potentials of (v. EULER and ÖLANDER), A., 129.
 electron displacement in (LUCAS), A., 943.
 thermal data of (PARKS and ANDERSON), A., 784.
 calorific value of (BARKER), A., 28.
 superheating of (SKRAUP and GUGGENHEIMER), A., 170.
 melting-point apparatus for (MACMULLIN), A., 593.
 crystal structure of (NOLD), A., 460.
 density of (HERZ), A., 117.
 volatility of (HERBST), A., 1087.
 viscosity of aqueous solutions of (CHADWELL), A., 1006.
 movements of solid particles or droplets of, on water (RAMDAS), A., 1095.
 isomeric, solubility of (COLLETT and JOHNSTON), A., 237.
 tendency of, to form molecular compounds (WEISSENBERGER, SCHUSTER, and PIATTI), A., 458.
 lability of halogens in (MACBETH, NUNAN, and TRAILL), A., 846.
 bromination and iodination of (ZMACZYNSKI), A., 604; (DODONOW), A., 1224.
 catalytic chlorination of, by sulphuryl chloride (SILBERRAD and BOAKE, ROBERTS & Co.), (P.), B., 1029.
 oxidation of (LEJEUNE), A., 482; (MEIGS and ELLIS-FOSTER Co.), (P.), B., 77.
 by copper oxide (STEOPOE), A., 595.
 catalytic oxidation of (DOWNS), (P.), B., 767, 851.
 liberation of hydrogen from (FRY and SCHULZE), A., 710.
 catalytic reduction of (SCHMIDT), A., 134; (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 733.
 reduction of, with and without catalysts (KLING and FLORENTIN), A., 331.
 irreversible (CONANT and CUTTER), A., 616; (CONANT and PRATT), A., 1134.
 containing oxygen, reduction of, by active carbon (STADNIKOV, GAVRILOV, and VINOGRADOV), A., 60.
 insoluble, reduction of, with hyposulphites (BUCHERER), (P.), B., 528.
 quaternary, compounds of iodoform with (STEINKOFF, ROCH, and SCHULTZ), A., 829.
 action of sulphur on (SZPERL and WYDRZYCKI), A., 952.
 oxygenated, manufacture of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 769.
 substituted, preparation of, with liquid reagents (SHANNAN and GAS LIGHT & COKE Co.), (P.), B., 28*.
 determination of carbon in (LOCHTE; BERL and BURKHARDT), A., 749.
 determination of halogens in (VAN DUIN), A., 632.
 determination of hydrogen in (BERL and BURKHARDT), A., 749.
 determination of iodine in (GEITER), B., 768.
 determination of nitrogen in (KÜRSCHNER), A., 702; (BERL and BURKHARDT), A., 749.
- Organic materials**, electrodeposition of (BEAL, EBERLIN, and EASTMAN KODAK Co.; SHEPPARD, BEAL, and EASTMAN KODAK Co.), (P.), B., 793.
- Organic matter**, mineralisation of (BURNLEY), (P.), B., 544.
 destruction of, by hydrogen peroxide (GRAU), A., 983.
- Organic residues**, tenacity of (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.

- Organic substances, deodorisation of vapours from drying of (STERLING), (P.), B., 141.
 oxidation of (BOEHRINGER & SOEHNE), (P.), B., 434.
 electrochemical oxidation of (FIGHTER), A., 912.
 of high ash content, analysis of (v. PEZOLD), B., 115.
- Organism, animal, bromine content of (BERNHARDT and UCKO), A., 635.
- Organisms, living, simulation of (HERRERA), A., 435.
- Organogels, preparation of (THOMAS and SIBI), A., 903.
- Organo-metallic compounds, cyclic (DREW), A., 311.
- Orientalis, basal metabolism of (MACLEOD, CROFTS, and BENEDICT), A., 426.
- Origanum maru* from Cyprus, essential oil of (IMPERIAL INSTITUTE), B., 215.
- Origanum virens*, essential oil of (ROMEO and GIUFFRÈ), B., 107.
- Origanum oil (ROMEO and GIUFFRÈ), B., 107.
- α -Ornithine, δ -benzoyl- α -*p*-toluenesulphonyl derivative (STEIB), A., 824.
- d*-Ornithine, configuration of (KARRER, ESCHER, and WIDMER), A., 505.
- dl*-Ornithine, synthesis of, from arginine (BERGMANN and KÖSTER), A., 1235.
- Ornithine, γ -hydroxy-, synthesis of, and its picrolonate (TOMITA and FUKAGAWA), A., 1235.
- d*-Ornithuric acid, esters (KARRER, ESCHER, and WIDMER), A., 505.
- Orthite from Madagascar (CAROBBI), A., 709.
- Orthophosphoric acid. See under Phosphorus.
- Oryzanin, physical properties of, from glutinous and from common rice (TADOKORO, NAKAMURA, and WATANABE), A., 1066.
- β -acid from hydrolysis of (SAHASHI), A., 846.
- Osmium, absorption spectrum of (MEGGERS and LAPORTE), A., 1193.
 crystal structure of (LEVI and HAARDT), A., 996.
- Osmium alloys (HAAGN and HERAEUS), (P.), B., 331*.
- Osmosis. See Electrical endosmosis.
- Osmotic pressure, relation of latent heat of evaporation to (SCHREBER), A., 579.
 of solutions (LEVALT-EZERSKI), A., 120, 571.
- Osofetrazines, constitution of (STOLLÉ), A., 1158.
- Ossification, hexosephosphoric esters in (MARTLAND and ROBISON), A., 968.
- Ovalbumin. See Albumin, egg-.
- Ovary, enzyme activity of desiccated preparations of (SHARLIT, NOYES, and FALK), A., 1279.
 extraction and properties of hormone from (RALLS, JORDAN, and DOISY; HARTMANN and ISLER), A., 1064.
 separation of lipoids from (FELNER), (P.), B., 341.
 proteins of (MEIERSDORF), A., 1167; (FULLERTON and HEYL), A., 1268.
- Ovens for ceramic ware (LAURENT), (P.), B., 489; (D'ARLEUX and VIOLETTE), (P.), B., 918.
 channel (PADELTY), (P.), B., 489*.
 distillation (LASCHE, GEISSEN, and KOHLENVEREDLUNG GES.), (P.), B., 396, 524.
 horizontal chamber, operation of (N.V. SILICA OVENBOUW Mij), (P.), B., 732.
 laboratory (SHARMA and DESAI), (P.), B., 34*.
 tunnel (PADELTY), (P.), B., 275.
- Overvoltage (MEUNIER), A., 130.
 theory of (KNOBEL), A., 479.
 hydrogen, film theory of, with reference to surface tension (MCAULAY and BOWDEN), A., 689.
 at mercury cathodes (MCAULAY and BOWDEN), A., 804.
- Ox brain, cheek, spleen, and tongue, nutritive value of proteins of (HOAGLAND and SNIDER), B., 846.
- Ox liver oil, highly unsaturated acids in (KIMURA), B., 285.
- 1:2:4-Oxadi-imines, supposed formation of (BURKHARDT, LAWORTH, and ROBINSON), A., 81.
- Oxalato-bismuthotartaric acid, salts (PORTILLO), A., 939.
- Oxalic acid, formation of, from ether, and its uranium salts (ROWELL and RUSSELL), A., 145.
 manufacture of, from wood (FALK), (P.), B., 385.
 anhydrous, vapour pressure of (NOYES and WORRE), A., 894.
 electrolytic reduction of (MOHRSCHEULZ), A., 1110.
 oxidation of, by iodic acid in aqueous solution (TODA; WIELAND and FISCHER), A., 806.
 effect of hydrocyanic acid on oxidation of, by iodic acid (WARBURG), A., 1011.
 oxidation of, with potassium permanganate (SCHEFF), A., 48.
 decomposition of, by acetic anhydride (WHITFORD), A., 146.
- Oxalic acid, action of, on alkalichlorides and nitrates (TANANAEV), A., 694.
 detection of, microchemically (WAGENAAR), A., 853.
 salts, recovery of, from tree barks (FRAYMOUTH and BHOPAL PRODUCE TRUST), (P.), B., 386*.
 ammonium salt, oxidation of mixtures of ferrous salts and (ONO), A., 926.
 reduction of mercuric chloride by, in presence of light (BECHTEREV), A., 920.
 beryllium salt, conductivity of (SIDGWICK and LEWIS), A., 1211.
 calcium salt, thermal decomposition of (MOLES and VILLAMIL), A., 1210.
 hydrates of, in plants (FREY), A., 440.
 hexamminecobaltous salt (BIRK and BILTZ), A., 661.
 manganous salt, hydrates of (CHAMBERLAIN, HUME, and TOPLEY), A., 1209.
 potassium salt, solubility of (VOSKRESSENSKAJA), A., 898.
 equilibria of water and, with mercuric and potassium chlorides (TRIFONOV), A., 246.
 effect of, on determination of blood-sugar (JOHN), A., 1067.
 potassium mercuric salt, decomposition of, by water and by light (SANDONINI), A., 252.
 silver salt, thermal decomposition of (MACDONALD and HINSHELWOOD), A., 134.
 sodium salt, reactions of, with salts of weak metallic bases (BRITTON), A., 586.
 uranyl salt (RAYNAUD), A., 147.
- Oxalic acid and its homologues, heats of combustion of dimethyl esters of (VERKADE, COOPS, and HARTMAN), A., 1210.
 ethyl ester, hydrolysis of (DARMOIS), A., 133.
 action of magnesium pyrryl bromide on (GODNEV and NARYSCHKIN), A., 183.
- Oxalo-*o*-nitrophenylhydrazide (GUTH and DE), A., 743.
- Oxalylacetone, ferrous salt (KÜSTER, ERFLE, v. ROLL, and SCHILLER), A., 821.
- Oxalyl methyl ketone, ferrous salts (KÜSTER, ERFLE, v. ROLL, and SCHILLER), A., 822.
- Oxanilic acid, ethylester, *o*-disulphide, and its derivatives (BOGERT and STULL), A., 310.
- 1:2(6)-Oxazines (KOHLE), A., 530.
- Oxazine dyes of the anthraquinone series (SCHMIDT, STEIN, and GRASELLI DYESTUFF CORP.), (P.), B., 817.
- Oxazolidonyl-3-allylthiocarbamide, and its dibromide (FROMM), A., 716.
- Oxazolidonyl-3-phenylthiocarbamide (FROMM), A., 716.
- Oxazoline, 2-amino-, acetate of (FROMM), A., 716.
- iso*Oxazoline oxides (KOHLE), A., 309; (KOHLE and BARRETT), A., 849; (KOHLE and SHOHAN), A., 1140.
- Oxazolinyl-2-allylthiocarbamide (FROMM), A., 716.
- Oxazolinyl-3-allylthiocarbamide, 2-imino-, and its dibromide (FROMM), A., 716.
- Oxazolinyl-2-phenylthiocarbamide, and its sulphate (FROMM), A., 716.
- Oxazolinyl-3-phenylthiocarbamide, 2-imino- (FROMM), A., 716.
- Oxidants, increase of potential from addition of reducing agents to (HENDRIXSON), A., 1009.
- Oxidation (TRAUBE and LANGE), A., 257.
 mechanism of (WIELAND and FISCHER), A., 806.
 in *vitro* (QUASTEL), A., 434.
 rates of (FRANCIS), A., 490.
 rate of, with acid diets (DURN), A., 861.
 of materials in suspended condition (HARRIS and INDUSTRIAL DRYER CORP.), (P.), B., 113.
 of organic compounds (LEJEUNE), A., 482; (BOEHRINGER & SOEHNE), (P.), B., 434.
 atmospheric (SMITH and SPOEHR), A., 249; (SPOEHR and SMITH), A., 385.
 biological secondary (HARRISON and THURLOW), A., 641.
 electrochemical. See under Electrochemical.
 low temperature, at charcoal surfaces (RIDEAL and WRIGHT), A., 919.
- Oxidation potentials of metals (BUTLER, HUGH, and HEY), A., 129.
- Oxidation-reduction (GIBBS, COHEN, and CANNAN), A., 60; (CLARK, COHEN and GIBBS), A., 1008; (CANNAN, COHEN, and CLARK), A., 1009.
 in cells (WURMSER), A., 1055.
- Oxidation-reduction potentials of organic compounds (v. EULER and ORANDER), A., 129.
 of reversible systems (FROMAGEOT), A., 687.

Oxides, electrolysis of, dissolved in boric acid or borates (ANDRIEUX), A., 248.
fused, used as refractories, thermal expansion of (MERRITT), B., 947.

α -Oxides from aldehydes and carboxylic acids (v. BRAUN and MÜNCH), A., 1122.

Oxidoanhydrostrophanthidin, derivatives of (JACOBS, HOFFMANN, and GUSTAV), A., 1250.

Oxidocamphene-2-carboxylic acid (HOUBEN and PFANKUCH), A., 1252.

1-Oxido-2-phenyl-3-indazyl sulphite (REISSERT and LEMMER), A., 528.

$\alpha\beta$ -Oxido- ϵ -piperidino- n -hexan- ζ -ol, and its salts and derivatives (v. BRAUN and MÜNCH), A., 1122.

Oximes, isomerism of (BRADY and MCHUGH; BRADY, COSSON, and ROPER), A., 69; (BRADY and GOLDSTEIN), A., 1039, 1142; (BRADY, DUNN, and GOLDSTEIN), A., 1141; (BRADY and DUNN), A., 1142.
rearrangement of (NEBER and v. FRIEDLSHEIM), A., 1247.
action of, with Japanese acid earth (INOUE), A., 1110.
catalysis of, with reduced copper (YAMAGUCHI), A., 520, 616.
action of potassium cyanide on (PASSERINI), A., 726.
reduction of, with sodium and alcohol (BILLON), A., 405.
copper compounds of (FEIGL, SICHER, and SINGER), A., 70.
compounds of, with zinc chloride (BILLON), A., 500.

Oximinic acids, and α -hydroxy-, esters of (HOUBEN and PFANKUCH), A., 1236.

Oximino-esters, electrolytic reduction of (ANZIEGIN, GULEWITSCH, and NORDHEIM), A., 1111.

Oxindole, iodo-, manufacture of (CHEM. FABR. FORM. SCHERINO), (P.), B., 514, 646.

Oxindole-3-acetic acid, preparation of (CHEM. FABR. FORM. SCHERING), (P.), B., 870.

Oxonium compounds (MCINTOSH), A., 144.

Oxyacanthine, and its derivatives (SPÄTH and KOLBE), A., 82; (GADAMER and v. BRUCHHAUSEN), A., 627.

Oxyberberine, synthesis of (SPÄTH and QUIETENSKY), A., 82.

Oxycellulose (KAUFFMANN; KARRER and LIESER), B., 267.

Oxydases (SERENI), A., 95; (ONSLOW and ROBINSON), A., 1176.
production of (FERNÁNDEZ and GARMENDIA), A., 1275.
of algae (GERTZ), A., 645.

Oxydigitogenic acid, oxidation of (WINDAUS and SHAR), A., 404.

Oxydoeductase. See Perhydridase.

Oxyethyltrimethylammonium bromide, β -nitro- (RENSHAW and BACON), A., 805.

Oxygen, manufacture of (SOC. L'OXYLITHE), (P.), B., 274; (SOC. ANON. LE SALVOXYL), (P.), B., 744.
spectral line of (MCLENNAN, McLEOD, and McQUARRIE), A., 985.
spectrum of (FRERICHS), A., 334.
in presence of neon (CAMERON), A., 333.
ionised, spectrum of (FOWLER), A., 445; (FOWLER and HARTREE), A., 650.
low-frequency spectrum of (DAUVILLIER), A., 1185.
ultra-violet spectra of (BOWEN and MILLIKAN), A., 445; (BOWEN and INGRAM), A., 1070.
spectra and critical potentials of (LOCKROW), A., 1188.
duration of light emission from (KERSCHBAUM), A., 652.
Döppler effect in canal rays of (KREFFT), A., 218.
scattering of X-rays by (CLAASSEN), A., 1072.
ionisation of, by electron impact (HOGNÉS and LUNN), A., 768.
ionisation potential of (BOWEN and MILLIKAN; FOWLER), A., 1073.
influence of chlorine on mobility of ions in (MAYER), A., 878.
electron affinity of (SENFLEBEN), A., 768.
monatomic molecules of (v. WISNIEWSKI), A., 1194.
molecules, orientation of, in a magnetic field (JACKSON), A., 657.
liquid, Kerr effect in (WALCH), A., 887.
dielectric constant of, and its variation with temperature (WERNER and KEESOM), A., 661.
latent heat of vaporisation of, and its mixtures with nitrogen (DANA), A., 568.
isotherms of (NIJHOFF and KEESOM), A., 463.
law of corresponding states applied to (KUYPERS), A., 570.
gas thermometry with (HEUSE), A., 786.
absorption of, by pyrogallol (v. KOVÁCS-ZORKÓCZY), A., 100.
measurement of, at high pressures (SESTINI), B., 875.
dissolved, removal of, from liquids (SCHUTER), B., 388.
equilibrium of, with heated solid metallic chlorides (JELLINEK and RUDAT), A., 909.
equilibrium of iron and (SCHÖNERT), B., 749.

Oxygen, infra-red emission spectrum of explosion of carbon monoxide and (GARNER, JOHNSON, and SAUNDERS), A., 658.
combustion of mixtures of dry carbon monoxide and (BONE and WESTON; BONE, FRASER, and NEWITT), A., 480.
combination of carbon monoxide and, in presence of copper, nickel, and their oxides (BONE and ANDREW), A., 250.
catalytic combination of carbon monoxide and, at a gold surface (BONE and ANDREW), A., 33.
combination of hydrogen and, in presence of excited mercury atoms (MARSHALL), A., 252.
ionisation in explosions of mixtures of hydrogen and (GARNER and SAUNDERS), A., 1205.
formation of hydrogen peroxide from hydrogen and (BONHOEFFER and LOEB), A., 583.
explosion of mixtures of ethyl bromide, nitrogen, and (JORISSEN and ONGKIEHONG), A., 690.
solubility and rate of solution of, in silver (STEACIE and JOHNSON), A., 1089.
action of mixtures of nitrogen and, on some elements (MONTE-MARTINI and LOSANA), A., 1216.
from peroxides for respirators (HANSEATISCHE APPARATEBAU v. BREMEN & Co.), (P.), B., 254.
influence of temperature on equilibrium of hæmoglobin and, in various organisms (MACELA and SELISKAR), A., 634.
tension of, in animal tissues (CAMPBELL), A., 537.

Oxygen detection and determination:—
detection of (MAUDE and WESTINGHOUSE ELECTRIC & MANUF. Co.), (P.), B., 274.
detection of small quantities of, in gas mixtures (SCHULEK), B., 388.
determination of, in aqueous solution in presence of nitrous acid (NOLL), A., 140.
determination of, in iron (OBERHOFFER, KEUTMANN, HESSENBRUCH, and AMMON), B., 790.
determination of, in metals (JORDAN and ECKMAN), B., 94.
determination of, in respiration (MCCLENDON, HUMPHREY, and LOUCKS), A., 1067.
dissolved, determination of, by Winkler's method (ALSTERBERG), A., 591.
determination of, in effluents (TROTMAN), B., 613.
determination of, in water in presence of nitrite (STAS), B., 110.

Oxygen electrodes. See under Electrodes.

Oxyhæmin anhydride, porphyrins from (HAMSIK), A., 968, 1265.

Oxyhæmoglobin, heat denaturation of (LEWIS), A., 1204.
spreading of (GORTER and GREDEL), A., 790.
conversion of methæmoglobin into (SAKURAI), A., 85.
sensitivity of methæmoglobin and, to reducing agents (NICLOUX and ROCHE), A., 1050.
peroxydase function of (BACH and KULTJUGIN), A., 432.
action of nitrites on (MEIER), A., 314.
action of potassium ferricyanide on (NICLOUX and ROCHE), A., 191.
from horse blood, metallic elements associated with (DESGREZ and MEUNIER), A., 191.

Oxyhydrogen gas, influence of ethylene on explosion limits of (JORISSEN and ONGKIEHONG), B., 179.

5-Oxymercuriphenylarsinic acid, 3-amino-4-hydroxy-, 3-acetyl derivative, bismuth salt (MASCHMANN), A., 311.

Oxyns (EIBNER and MUNZERT), B., 888.

Oxyproteic acid, constitution of (GIEDROYC), A., 636.

Oxythionaphthens, halogenated (HOFFA and GRASSELLI DYE-STUFF CORP.), (P.), B., 703*.

3-Oxythionaphthen-2-carboxylic acid, ethyl ester (ARNDT, KIRSCH, and NACHTWEY), A., 843.

3-Oxythionaphthensulphone-2-carboxylic acid, methyl ester (ARNDT, KIRSCH, and NACHTWEY), A., 843.

Oyamalite, analysis of (KIMURA), A., 144.

Ozodihydrocodeine, and its derivatives, and chloro- (SPEYER and POPP), A., 532.

Ozoethylidihydromorphine, and its hydriodide (SPEYER and POPP), A., 532.

Ozokerite, cracking of (TOPORESCU), B., 428*.

Ozone in the atmosphere (DOBSON and HARRISON), A., 493; (CHREE), A., 494.
variation of (BUISSON and JAUSSEAN), A., 267.
formation of (v. WARTENBERG and TREPPENHAUER), A., 260; (v. WARTENBERG), A., 708.
influence of electrodes on, in the electric discharge (NEWSOME), A., 919.
by electronic impact (KRÜGER and UTESCH), A., 136.

- Ozone, formation of, from oxygen by mercury vapour (DICKINSON and SHERRILL), A., 485.
 in the oxyhydrogen flame (RIESENFELD and v. GÜNDELL), A., 697.
 thermal formation of (RIESENFELD and BEJA), A., 124.
 production of (STARKE, v. WARTENBERG, and OZONHOCH-FREQUENZ GES.), (P.), B., 413*.
 electrical apparatus for generating (MCBLAIN), (P.), B., 677*.
 vapour pressure of (RIESENFELD and BEJA), A., 117.
 at low temperatures (SPANGENBERG), A., 569.
 decomposition of, in red light (KISTIakovSKI), A., 34.
 into oxygen (WULF), A., 485.
 effect of, on oils (DOVER and APPLEBY), B., 199.
 action of, on petroleum (KITA, ABE, and TADA), B., 475.
 determination of (McDONNELL), B., 273.
 determination of, in the atmosphere (DOHSON and HARRISON), A., 140.
- Ozonisers (ARENA), (P.), B., 164.
 cooling of electrodes in (GRAEF and AKT.-GES. F. OZON IND.), (P.), B., 332*.
 portable (CAILLIET and BOURDAIS), (P.), B., 677*
- P.**
- Packing-house waste, treatment of (MOHLMAN; BARTOW), B., 998.
- Paints (SHIMADZU), (P.), B., 554*.
 manufacture of (BILLINGHAM), (P.), B., 837.
 material for use in manufacture of, from fruit of *Rhamnus* species (MAISON BRETON, FICHOT & Co. and CRUT), (P.), B., 595.
 flash-points of (SMITH and CROW), B., 594.
 influence of particle size of pigments on (VAN HOEK), B., 449.
 influence of hardening period on protective influence of (FRIEND and GRIFFIN), B., 553.
 heavy spar and "blanc fixe" in (VAN HOEK), B., 287.
 composition for removal of (LITTMANN and COMMERCIAL SOLVENTS CORP.), (P.), B., 203; (PHILLIPS and Goss), (P.), B., 554.
 experiments on (WENTWORTH-SHEILDS), B., 888.
 for traffic markings (NELSON and WERTHAN), B., 924.
 anti-fouling, self-disintegrating metallic compounds for use in (HESKETT and MOLESWORTH), (P.), B., 680.
 bituminous (HAY), (P.), B., 595.
 lead suboxide, "leading" by (BLOM), B., 760.
 light-coloured, photometric measurement of hiding power of (BRUCE), B., 500.
 lithopone. See Lithopone paint.
 mixed, settling and packing of (ARSEN), B., 287.
 rubber (SHINE), (P.), B., 680.
 titanium oxide, preparation of (WEIZMANN and BLUMENFELD), (P.), B., 889.
 water-line, for ships (RAGO), B., 553.
 waterproof (LATEX DEVELOPMENTS and RUSSELL), (P.), B., 137.
 white, brightness and opacity of (RHODES and FONDA), B., 287.
 testing of (SCHULZ), B., 924.
 by the Liebmann reaction (STOCK), B., 888.
 testing of the rust-protective power of (HERRMANN), B., 167.
 detection of resin or resin compounds in (SCHULZ and KRÄMER), B., 796.
 determination of covering power, opacity, and grain size of (REGLIN), B., 333.
 determination of solvents in (WOLFF), B., 136.
 receiver for (TOELDT), B., 202.
- Paint bases (BERGOLIN-WERKE), (P.), B., 761.
- Paint coatings, protective (TERVER), B., 679.
- Paint films, alteration of, on heating (WOLFF and ZEIDLER), B., 679.
 adsorption of soluble salts by (WOLFF and ZEIDLER), B., 501.
- Paint industry (MORGAN), B., 373; (TOCH), B., 837.
 use of asbestos in (ROSENBERG), B., 955.
 use of the quartz-lamp in (SCHMIDINOER), B., 760.
- Paint material, manufacture of, for use with water or oil (TSUBATA), (P.), B., 333*.
- Paint oils containing linolenic acid (EIBNER and REITTER), B., 593.
- Paint pigments, testing of, for transparency to ultra-violet radiation (STUTZ), B., 759.
- Paint removers containing furfuraldehyde (ELLIS and CHADELOIN CHEMICAL Co.), (P.), B., 890.
- Paint vehicles (V. and H. LANOE), (P.), B., 796.
- Paintings, oil, effect of change in refractive index of linseed oil in drying on the deterioration of (LAURIE), B., 795.
- Palaquium Burkii* (small Siak illipé nut), irradiation of sterols from (HUME and SMITH), A., 644.
- Palladium, absorption spectrum of (MEGGERS and LAPORTE), A., 1193.
 arc spectrum of (BECHERT and CATALÁN), A., 214; (MCLENNAN and SMITH), A., 875.
 Zeeman effect in arc and spark spectra of (LEVITSKI), A., 875.
 series spectrum of (MCLENNAN and SMITH), A., 766.
 Hall effect in films of (PEACOCK), A., 565.
 total brightness of, at the melting point (BRODHUN and HOFFMANN), A., 784.
 equilibrium of hydrogen with, and formation of hydrides (GILLESPIE and HALL), A., 682.
 as catalyst in oxidation reactions (TRAUBE and LANGE), A., 257.
- Palladium alloys (KORSUNSKY), (P.), B., 755.
 in jewellery, and their detection (DURDIK), B., 791.
- Palladium salts, compounds of, with nitric oxide (MANCHOT and WALDMÜLLER), A., 1219.
- Palladium chloride, compound of carbon monoxide with (MANCHOT and KÖNIG), A., 698.
 oxides (LEVI and FONTANA), A., 1017.
- Palladium organic compounds:—
 with $\beta\beta'\beta''$ -triaminotriethylamine (MANN and POPE), A., 387.
 Palladous compounds with ethylenediaminobisacetylacetone (MORGAN and SMITH), A., 600.
- Palladium determination and separation:—
 determination of small quantities of (ROBINSON), B., 546.
 determination of, in ore concentrates (DAVIS), B., 589.
 separation of, by means of benzoylmethylglyoxime (HANUS, JÍLEK, and LUKAS), A., 141.
 separation of platinum and (MANCHOT), A., 138.
- Pallado-oxalic acid, potassium and sodium salts (LANDESEN), A., 698.
- Palm fruit, extraction of oils from (DICKINSON, BRIMLEY, and NIGERIAN PRODUCTS), (P.), B., 20.
 and other nuts, digesters for treating (DOWNS and BELLWOOD), (P.), B., 20.
- Palm-kernel oil, determination of, in margarine (ELSDON and SMITH), B., 295.
- Palmitine, synthesis of (SPÄTH and QUIETENSKY), A., 82.
- Palmitic acid, molecular orientation of, on surfaces (TRILLAT), A., 890.
 thallos salt (CHRISTIE and MENZIES), A., 56.
 esters (ABDERHALDEN, PAFFRATH, and SICKEL), A., 97.
 propyl ester (FEAR and MENZIES), A., 604.
 wax esters of (GRÜN, ULBRICH, and KREZIL), A., 597.
- β -Palmityl dichlorohydrin (WHITBY), A., 819.
- Palmitylphenylhydrazide (VAN ALPHEN), A., 47.
- Pancreas, effect of removal of, on nitrogen and sugar in blood and urine (CHAMBERS and CORYLLOS), A., 1270.
 internal secretion of (CHOAY), A., 1179.
 enzymes of (WALDSCHMIDT-LEITZ and HARTENECK), A., 323.
 hormone from (LANGECKER and WIECHOWSKI), A., 205.
 insulin content of, in diabetes (POLLAK), A., 1054.
 nickel and cobalt in (BERTRAND and MACHEBEUF), A., 869.
 nucleic substances of (HSÜ), A., 857.
 diseased, lipase in serum in cases of (JEDLIČKA and KREISINGER), A., 860.
- Pancreatic juice, secretion of (MELLANBY), A., 858.
- Pandermite (GUTHRIE, HÜTTIG, and LINCK), A., 379.
- Papain, commercial, and its purification (FROSSARD), B., 510.
 effect of hydrogen-ion concentration on activity of (RINGER and GRÜTTERINK), A., 977.
- Papaverine metho-*p*-toluenesulphonate (RODIONOV), A., 533.
- Papaya, vitamins from (MILLER), A., 871.
- Paper, manufacture of (BÜCKING), (P.), B., 122* ; (DE CEW), (P.), B., 483.
 machines for (BLIGHT), (P.), B., 86*.
 recovery of soda from solutions used in (WALLACE), (P.), B., 401.
 removal of impurities from fabrics used in (FUHRMANN), (P.), B., 10.
 effect of chemicals in (SIEBER), B., 46.
 hydration of cellulose fibres for (DE CEW, and PROCESS ENGINEERS), (P.), B., 533.
 effect of dyes used in, on animal life of water (HAEMPEL), B., 264.

- Paper, drying of (GREWIN; DRYING SYSTEMS), (P.), B., 269; (ALEXANDER), (P.), B., 627.
 apparatus for (LYTH), (P.), B., 534*.
 sizing of (JANSER), (P.), B., 10; (DE CEW and PROCESS ENGINEERS), (P.), B., 49; (DE CEW), (P.), B., 739.
 chemical activity of cellulose in (OEMAN), B., 313.
 aluminium resinate in (OEMAN), B., 912.
 emulsifying apparatus for preparation of size for (BEST), (P.), B., 235*.
 resin sizing of (LORENZ), B., 47; (OEMAN), B., 313.
 loading and sizing of (ROSCHIER), B., 704.
 apparatus for sizing, dyeing, and impregnating (KREMLER), (P.), B., 661.
 removal of moisture from (TASKER), (P.), B., 913.
 moisture-resisting (FUES), (P.), B., 740*.
 and paper pulp (SUMMERS), (P.), B., 913*.
 stiffness of (SCHULZ and EWALD), B., 47.
 coating of (J. D. and D. MACLAURIN), (P.), B., 627.
 with glue (HAMILL, GOTTSCHALK, and BICKING), B., 1008.
 filler and coating for (ROSTON), (P.), B., 913.
 stabilising suspensions of coating materials for (STEADMAN), B., 532.
 waterproofing of (WOLFFENSTEIN and MARCUSE), (P.), B., 534.
 waterproof, production of (KNOFF), (P.), B., 627.
 combinations of rubber and (HOPKINSON, ROSE, and GEN. RUBBER Co.), (P.), B., 555.
 de-inking of (HAMMOND), (P.), B., 316; (PLUMSTEAD and JESSUP & MOORE PAPER Co.), (P.), B., 534; (GRANTON), (P.), B., 534*.
 utilisation of waste material from (GRANTON), (P.), B., 10.
 half-stock, preparation of (MACKAY), (P.), B., 1010.
 old, removal of printers' ink from (BERL and PFANNÜLLER), B., 268; (ALBRECHT), B., 356; (STEPHAN), B., 400.
 parchment, recovery of waste sulphuric acid from manufacture of (BECHTOLD and KARLUS), (P.), B., 316.
 photographic. See Photographic paper.
 safety, manufacture of (REINHEIMER), (P.), B., 401; (CONE), (P.), B., 661.
 sulphite tissue, as material for celluloid (ATSUKI and ISHIHARA), B., 738.
 used, reclaiming of (HAMMOND), (P.), B., 316, 913.
 waste, pulping of (LEICESTER and HOLMAN), (P.), B., 269*.
 distinguishing sulphite- and soda-celluloses in (KORN), B., 47.
 determination of acidity of (KOHLER and HALL), B., 268.
Paper boards, treatment of wood for manufacture of (BRÄUNLICH), (P.), B., 945.
Paper fillers, comparison of (SHAW and BICKING), B., 313.
Paper industry, metallographic study of corrosion in (LINDT), B., 871.
Paper machines, prevention of froth on (DE CEW and PROCESS ENGINEERS), (P.), B., 356.
Paper pulp, manufacture of (MCKAIN, ALEXANDER, GENBERO, and NEKOOSA-EDWARDS PAPER Co.), (P.), B., 48; (SUMMERS), (P.), B., 153, 534*; (MASCHINENBAU-ANSTALT HUMBOLDT); (P.), B., 153; (BRADLEY and MCKEEFE), (P.), B., 315; (BURLIN, LEICESTER, and HOLMAN), (P.), B., 436; (LAMBERT and MATTHEWS), (P.), B., 534; (FISH and WOOD PRODUCTS & BY-PRODUCTS CORP.), (P.), B., 580; (TINGLE), (P.), B., 739.
 from rice hulls (MORGENIER), (P.), B., 269.
 from seaweed (A. J. and H. DE MONTBY), (P.), B., 315.
 from waste paper (MOELLER), (P.), B., 976.
 preservation of fibres for (LATHROP and MUNROE), (P.), B., 315.
 treatment of (GREGOR, OSBORNE, and KEMZURA), (P.), B., 580.
 bleaching of (WOLF), (P.), B., 661; (GREGOR, OSBORNE, and KEMZURA), (P.), B., 913.
 digestion of, and concentration of spent lye (HOLMES), (P.), B., 533.
 digesters, rotary (MORTERUD), (P.), B., 152.
 sizing of (DE CEW), (P.), B., 661.
 half-stuffs, testing the strength of (SCHWALBE), B., 912.
 vessels, coating of (BAUMGÄRTNER, KATZ & Co.), (P.), B., 783.
 sulphate, regeneration of black liquor from manufacture of (WHITE, ALEXANDER, and GOODELL), (P.), B., 401.
Parabanic acid, preparation of (BILTZ and SCHIEMANN), A., 622.
Parabarine, derivatives of (CAMPELL, HAWORTH, and PERKIN), A., 303.
Paracetaldehyde, bromination of (DWORZAK), A., 385.
 action of, on potassium iodide (HANSEN), A., 1226.
Parachor, and chemical constitution (SUGDEN and WILKINS), A., 157.
Paraffins, dielectric constants of (PÉCHEUX), B., 971.
cycloParaffins, spatial structure of (WIGHTMAN), A., 1238.
Paraffin oil, solutions of (WOODMAN), B., 139.
 desulphurisation of (BUBE), (P.), B., 1007.
Paraffin wax, extraction of, from low-temperature tar (MAILHE), (P.), B., 479.
 precipitation of, from petroleum (JONES and SHARPLES SPECIALTY Co.; PETTY and DE LAVAL SEPARATOR Co.), (P.), B., 40.
 properties of (CARPENTER), B., 731.
 crystallisation of (PADGETT, HEFLEY, and HENRIKSEN), B., 811.
 sweating and crystallisation of (BURMAH OIL Co., ALLAN, and MOORE), (P.), B., 147.
 adsorption of resins by (TSCHERNOSHUKOV), B., 307.
 removal of, from petroleum oil (GLAIR, BRANSKY, and STANDARD OIL Co.), (P.), B., 575.
 centrifugal separation of, from oil (SHARPLES SPECIALTY Co.), (P.), B., 113.
 separation of, from lubricating oil (PETTY and DE LAVAL SEPARATOR Co.), (P.), B., 478.
 separation of, from mineral oil distillates (HALL, HAPGOOD, and DE LAVAL SEPARATOR Co.), (P.), B., 353.
 centrifugal separators for removal of, from mineral oils (HARVEY and HOLFORD), (P.), B., 526.
 non-acidic oxidation of (FRANCIS and GAUNTLETT), A., 1119.
 cracking of, in presence of activated charcoal (HERBST), B., 261.
 action of hydrogen on, under high pressure at 450° (WATERMAN and BLAAUW), B., 307.
 constitution of hydrocarbons from (PIPER, BROWN, and DYMONT), A., 43.
 solidification of products containing (TSCHERNOSHUKOV), B., 307.
 properties and testing of, and its determination in mixtures with oil (WYANT and MARSH), B., 37.
 membranes. See under Membranes.
Paraformaldehyde, separation of, from gases containing formaldehyde (TROTSCH and ROELEN), B., 897.
Paramagnetism and temperature (WEISS), A., 230; (COLLET), A., 234; (CARRERA and PALACIOS), A., 892.
 at low temperatures (JACKSON), A., 1197.
 of odd molecules (TAYLOR), A., 566.
 of metallic salts, effect of complex ions on (SHAFFER and TAYLOR), A., 567.
Paramæcia, sugar metabolism of (BURGE), A., 539.
Parathyroids, action of extracts of (CAMERON and MOORHOUSE; WHITE and CAMERON), A., 1180.
 activity of commercial extracts of (KOHLER), B., 964.
 effect of extracts of, on blood and nerves (BERMAN), A., 326.
 internal secretion from (BERMAN), A., 979.
Parathyroids, hormone from (COLLIP and CLARK), A., 206, 1180; (COLLIP), A., 546; (DAVIES, DICKENS, and DODDS), A., 980.
 effect of hormone from, on blood (CANTAROW, CAVEN, and GORDON), A., 1279.
 simulation of phenomena due to overdosage with hormone from, by means of salts (COLLIP), A., 640.
 iodine content of (HJORT, GRUHZIT, and FLIEGER), A., 1167.
Parthenium argentatum, sterol and its derivatives from (SCHMID and STÖHR), A., 949.
α-Particles, measurement of (GREINACHER), A., 553.
 range of (LOEB and CONDON), A., 5.
 in various media (ADAMS), A., 1076.
 scattering of (SMEKAL), A., 772; (ROSE; GUTH), A., 880.
 anomalous scattering of (DEBYE and HARDMEIER), A., 450; (HARDMEIER), A., 390.
 capture of electrons by, in hydrogen (JACOBSEN), A., 655.
 production of β-rays by (CHADWICK and EMELÉUS), A., 220.
 excitation of X-rays by collision of positive rays and (GERTHSEN), A., 655.
 chemical action of ions produced by (LIND and BARDWELL), A., 4, 770, 1077; (LIND, BARDWELL, and PERRY), A., 769.
 stopping power of mica and metals for (CONSIGNY; ROSENBLUM), A., 879.
 penetration of matter by (BECKER), A., 1076.
 action of, on acetylene (MUND and KOCH), A., 481.
 effect of, on supersaturated solutions (RICHARDS), A., 1190.
 long-range, from radioactive substances (CURIE and YAMADA), A., 220.
β-Particles, retardation of (D'ESPINE), A., 332.

- Particle size, measurement of (GREEN), B., 935.
 measurement and industrial importance of (PARRISH), B., 935.
 Partition between two phases, Traube's rule applied to (FRUMKIN), A., 1090.
 Partition coefficients, and solubility ratios (DHAR), A., 898.
 Paschen-Back effect, intermediate stages between the Zeeman effect and (MENSING), A., 1072.
 Passivity (RUSSELL), A., 133.
 Paste for paper and cardboard (WATTECAMPS), (P.), B., 188*.
 Pastes, insulating, corrosion of metals by (REINER), B., 636.
 Pasteur reaction, effect of ethylcarbylamine on (WARRBURG), A., 974.
 Pastilles, determination of mercuric chloride in (RUPP, MÜLLER, and MAISS), B., 849.
 Pasture, nutritive value of (WOODMAN, BLUNT, and STEWART), B., 506.
 Paving materials (RAMSDEN), (P.), B., 129, 918*.
 mortar for (VAN WESTRUM), (P.), B., 363.
 production of plastic masses for use as (BENZOL-VERBAND GES.), (P.), B., 879.
 cold bituminous (BERGER), (P.), B., 825.
 Peas, influence of degree of maturity on the composition of (MUTTELET), B., 644.
 macerated, proteolytic activity of (FODOR and SCHÖNFELD), A., 866.
 preserved, in relation to their diameter (LASAUSSE), B., 382, 644.
 preserved green, differentiation of reconstituted dried peas and (MUTTELET), B., 296.
 Peaches, canned, vitamins in (KOHMAN, EDDY, CARLSSON, and HALLIDAY), B., 382.
 Peanut oil. See *Arachis* oil.
 Peanut shells, alcohol, acetic acid, and other by-products from (DE BELSUNCE), B., 448.
 Pears, stone cells of (DORÉE and BARTON-WRIGHT), A., 872.
 extraction of sugar from (DISTILLERIES DES DEUX-SÈVRES), (P.), B., 294.
 Pear trees, phloridzin in (HARVEY), A., 981.
 Pearl essence, purification of (PAISSEAU), (P.), B., 323*, 665.
 Peat, origin of (THAYSEN, BAKES, and BUNKER), B., 305, 476*.
 definition of the term (STADNIKOV and PROSKURNINA), B., 729.
 formation and utilisation of, with special reference to Sweden (ODÉN), B., 82.
 colloid chemistry of (OSTWALD and STEINER), B., 34.
 treatment of (WINTER), (P.), B., 777; (PERKIN), (P.), B., 971.
 removal of water from (RIGBY), (P.), B., 861.
 drying machine for (WILLMARTH), (P.), B., 228.
 suspensions, displacement of heavy or cold liquids from, by light or hot liquids (MOLIN), (P.), B., 315.
 decomposition of (MEUNIER and DE BRISSON DE LAROCHE), (P.), B., 476.
 thermal decomposition of, under reduced pressure (REILLY and PYNE), B., 906.
 carbonisation of (GARROW), (P.), B., 733*.
 gasification and carbonisation of (KEPELER), B., 616.
 coking of, in presence of tar oil (DICKERT), (P.), B., 862.
 raw, preparation of, for pressing (SUNDLING), (P.), B., 731.
 manufacture of cellulose from (SCHMIDT), (P.), B., 315.
 coal-like substance from (LINKER), (P.), B., 572.
 dyes from (KOZAK, WEINBERGER, and PROKOPCZUK), (P.), B., 149.
 manufacture of fuel from (CHEM. FABR. HEPPES & Co. and CARPZOW), (P.), B., 228.
 decomposition of raw phosphates with (ROZANOV), B., 1023.
 decomposition of phosphorite by (PRIANISCHNIKOV), B., 335.
 utilisation of nitrogen of, by plants (KUPREENOK), B., 416.
 analyses of, and theories of coal formation (ODÉN and LINDBERG), B., 568.
 Peat briquettes. See under *Briquettes*.
 Pectic acids (NELSON), A., 1125.
 Pectin, constitution of (AHMANN and HOOKER), A., 821; (DORÉ), B., 171.
 preparation of (LIOT and MACÉ), (P.), B., 848.
 preparation and colloidal properties of (GRIGGS and JOHNSTON), B., 643.
 ash-free, preparation of (EMMETT), A., 872.
 extraction of (DISTILLERIE DES DEUX-SÈVRES), (P.), B., 339.
 from apples (PAUL), (P.), B., 766.
 content of flax fibre (HONNEYMAN), B., 187.
 jellies, jelly strength of (BAKER), B., 213.
 products, commercial (ECKART), B., 296.
 Pectin, determination of (AHMANN and HOOKER), B., 460.
 determination of starch in (ECKART and DIEM), B., 688.
 Pectins, decomposition of (MEHLITZ), B., 418.
 determination of (EMMETT and CARRÉ), A., 444.
 Pectinogen, de-esterification of (NANJI and NORMAN), B., 930.
 Pectolites from Lapland (KOSTYLEVA), A., 1022.
 ω -Pelletierine *N*-oxide and its hydrobromide (POLONOVSKI), A., 1160.
 Pennyroyal. See *Mentha pulegium*.
 Pennyroyal oil (ROMEO and GIUFFRÉ), B., 107.
 Pen-points, alloys for (GOLDSMITH), (P.), B., 245.
 Penroseite (GORDON), A., 709.
 Pentachlororuthenites. See under *Ruthenium*.
 Pentadecane, *ao*-dibromo- (CHUIT), A., 499.
 cycloPentadecane (RUZICKA, BRUGGER, PFEIFFER, SCHINZ, and STOLL), A., 727.
 Pentadecane-*ao*-dicarboxylic acid, and its esters (CHUIT), A., 500.
 Pentadecane-*ao*-diol (CHUIT), A., 499.
 Pentadecan-*o*-ol, α -bromo- (CHUIT), A., 499.
 cycloPentadecanone, and its semicarbazone (RUZICKA, STOLL, and SCHINZ), A., 615.
n-Pentadecoylacetone, and its copper salt (MORGAN and HOLMES), A., 148.
 $\Delta\alpha\beta$ -Pentadiene (BOVIS), A., 495.
 $\Delta\alpha\gamma$ -Pentadiene, derivatives of, and $\beta\gamma$ -dibromo- (PRÉVOST), A., 496.
 $\Delta\alpha\beta$ - and $\Delta\alpha\gamma$ -Pentadienes, bromides of (DUMOULIN), A., 710.
 cycloPentadiene, polymeride of, and its derivatives (STAUDINGER and BRUSON), A., 719; (BRUSON and STAUDINGER), B., 451.
 $\Delta\beta\delta$ -Pentadiene-*N*-sulphonic acid, α -imino- ϵ -hydroxy-, disodium salt (BAUMGARTEN), A., 844.
 $\Delta\alpha\gamma$ -Pentadiene (PRÉVOST), A., 496.
 Pentaerythritol, crystal structure of (NITTA), A., 665.
 non-tetrahedral carbon atom in crystals of (HUGGINS and HENDRICKS), A., 227.
 tetra-acetate, preparation of (CLARKE and EASTMAN KODAK Co.), (P.), B., 645.
 Pentaerythritol acetals, hydrolysis of (SKRABAL and ZLATEVA), A., 681.
 Pentaformatothoric acid, potassium salt (WEINLAND and STARK), A., 498.
 Pentamercuriacetanilide acetate, halogenation of (BERNARDI), A., 966.
 2:4:5:2':4'-Pentamethoxydiphenyl- α -naphthylmethane (SZÉKI), A., 285.
 2:4:6:3':4'-Pentamethoxy-*aa*-diphenylpropane, $\beta\gamma$ -dihydroxy-, diacetyl derivative (NIERENSTEIN), A., 955.
 2:4:6:3':4'-Pentamethoxy- α -diphenylpropan- β -one, γ -hydroxy-, acetyl derivative (NIERENSTEIN), A., 955.
 5:7:3':4':5'-Pentamethoxyflavylium salts (GATEWOOD and ROBINSON), A., 1043.
 2:4:6:3':4'-Pentamethoxy-3-phenylcoumarin (NIERENSTEIN), A., 954.
 Pentamethylbenzene, preparation of (SMITH and DOBROVOLNY), A., 719.
 Pentamethyldiethylmercaptoglucose (LEVENE and MEYER), A., 1026.
 Pentamethylene sulphide and its derivatives (THIERRY), B., 116.
 Pentamethylenetrazole, pharmacological, action of (EICHLER and HILDEBRANDT), A., 1057.
 1:5-Pentamethylene-1:2:3:4-tetrazole (SCHMIDT), (P.), B., 932.
 Pentamethylgluconic acid (LEVENE and MEYER), A., 49.
 Pentamethylglucose, and its dimethylacetal (LEVENE and MEYER), A., 1026.
 Pentane, $\alpha\beta\gamma$ -tetrabromo- (BOVIS), A., 495.
 $\alpha\beta\delta$ -tetrahydroxy- (PRÉVOST), A., 936.
l-Pentane, $\beta\delta$ -diamino-, di-*d*-tartrate of (JAEGER), A., 1157.
 cycloPentane, action of anhydrous aluminium chloride on (COX), A., 267.
 dicycloPentane series, tautomerism in (HASSELL and INGOLD), A., 953.
 Pentane- γ -carboxylic acid, $\alpha\delta$ -dibromo-, ethyl ester (MILLS and BAINS), A., 44.
 cycloPentane-1'-carboxyl-*p*-toluidinocyclopentane-1-carboxylic acid, 1:1'-hydroxy-, lactone (OAKESHOTT and PLANT), A., 843.
 cycloPentane-1:2-dicarboxylic acid, 2:3-dibromo- (HASSELL and INGOLD), A., 820.
 Pentan- β -ol, α -hydroxylamino-, oxalate, and α -nitro- (SCHMIDT, ASCHERL, and MAYER), A., 45.

- cyclopentanol-1:2-dicarboxylic acid*, and its silver salt, and ethyl ester (HASSELL and INGOLD), A., 820.
- cyclopentanone* in the distillation products of lignite (VORLÄNDER and GÖRNANDT), B., 906.
- cyclopentanone-3-carboxylic acid*, ethyl ester, and its semicarbazone (INGOLD, SHOFFEE, and THORPE), A., 939.
- cyclopentanonedicarboxylic acid*, ethyl ester (INGOLD, SHOFFEE, and THORPE), A., 939.
- Pentacyclopentadiene* (STAUDINGER and BRUSON), A., 719.
- 2:3:4:5:6-Pentaphenylfulvene* (LÖWENBEIN and ULICH), A., 171.
- 1:2:3:4:5-Pentaphenyl-2:4-cyclopentadiene*, and 1-bromo-, and 1-chloro- (ZIEGLER and SCHNELL), A., 58.
- 1:2:3:4:5-Pentaphenyl-2:4-cyclopentadien-1-ol* (ZIEGLER and SCHNELL), A., 58.
- 1:2:3:4:5-Pentaphenyl-2:4-cyclopentadienyl* (ZIEGLER and SCHNELL), A., 58.
- Pentatriacontane*, *ps-dibromo-*, and *ps-dichloro-* (GRÜN, ULBRICH, and KREZIL), A., 596.
- Pentatriacontan-o-ol*, and its derivatives (GRÜN, ULBRICH, and KREZIL), A., 596.
- Δ^α-Pentatriacontene* (GRÜN, ULBRICH, and KREZIL), A., 596.
- α-Pentatriacontyl esters* (GRÜN, ULBRICH, and KREZIL), A., 597.
- Δ^α-Pentene*, *β_γ-dibromo-* (BOUIS), A., 495.
- Δ^β-Pentene*, *α-bromo-* (BOUIS), A., 495.
- γ-hydroxy-*, *benzoate* (GELISSEN and HERMANS), A., 63.
- Δ^β-Pentene-γδ-dicarboxylic acid*, *β-hydroxy-*. See *Dimethylitaconic acid*, *hydroxy-*.
- cyclopentene-1:2-dicarboxylic acids* (HASSELL and INGOLD), A., 820.
- Δ^γ-Pentene-ααε-tricarboxylic acid*, trimethyl ester (KOHLE and BUTLER), A., 713.
- Δ^α-Pentenoic acid* (BOURGUEL and YVON), A., 269.
- Δ^γ-Penten-β-ol allophanate* (DELABY and MOREL), A., 498.
- Δ²-cyclopentenyl chloride* (NOLLER and ADAMS), A., 1137.
- Δ²-cyclopentenylacetic acid*, and its ethyl ester (NOLLER and ADAMS), A., 1137.
- α-Δ¹-cyclopentenylacetophenone*, and its derivatives (FARROW and KON), A., 1040.
- β-Δ²-cyclopentenylethyl alcohol* (NOLLER and ADAMS), A., 1138.
- Δ²-cyclopentenylmalonic acid*, and its diethyl ester (NOLLER and ADAMS), A., 1137.
- Pentimene*, *α-bromo-* and *α-iodo-* (GRIGNARD and PERRICHON), A., 382.
- Δ^β-Pentinenyl acetate* (PRÉVOST), A., 818.
- Pentosans*, determination of (OSIIMA and KONDO), A., 1164.
- Pentoses*, metabolism of. See *Metabolism*.
- determination of, colorimetrically (McCANCE), A., 1283.
- cyclopentylacetic acid*, *α-bromo-*, and its ethyl ester (v. BRAUN and MÜNCH), A., 1122.
- cyclopentylethylene oxide* (v. BRAUN and MÜNCH), A., 1122.
- cyclopentylidenemalonic acid*, and its ethyl ester (KON and SPEIGHT), A., 1246.
- cyclopentylidene-α-methylmalonic acid*, and its derivatives (KON and SPEIGHT), A., 1247.
- cyclopentylmethylmorphine*, and its salts (v. BRAUN, KÜHN, and SIDDIQUI), A., 851.
- γ-cyclopentylpropyl alcohol*, and its phenylurethane (KOLLER and ADAMS), A., 597.
- μ-cyclopentyltridecoic acid*, and *μ-hydroxy-*, and its methyl ester (NOLLER and ADAMS), A., 597.
- κ-cyclopentylundecic acid* and *κ-hydroxy-*, methyl ester (NOLLER and ADAMS), A., 597.
- Peonidin chloride*, synthesis of (NOLAN, PRATT, and ROBINSON), A., 1043.
- Pepper*, detection of added shells in (SMITH, ALFEND, and MITCHELL), B., 895.
- Pepper plant*, New Zealand, essential oil from (FINLAY), A., 981.
- Peppermint*, Japanese, grown at Madison, Wisconsin, volatile oil of (JENISON and KREMERS), B., 803.
- See also *Mentha piperita*.
- Peppermint oil*, aldehydes of (KREMERS), B., 462.
- determination of esters and menthol, and detection of methyl sulphide in (FIGDOR), B., 383.
- Pepsin*, effect of ultra-violet radiation on (HUSSEY and THOMPSON), A., 202.
- radiochemical inactivation of solutions of (HUSSEY and THOMPSON), A., 323.
- inactivation of, by heat (KRAUS), A., 757.
- viscosity of solutions of (VAN URK), A., 201.
- Pepsin*, stability of solutions of (ROSTOCK), A., 1275.
- hydrolysis by (STEUDEL, ELLINGHAUS, and GOTTSCHALK), A., 866.
- action of (WALDSCHMIDT-LEITZ and SIMONS), A., 1060.
- in presence of buffers (SMORODINCEV and ADOVA), A., 202.
- on fibrin (SMORODINCEV and ADOVA), A., 322.
- rennin-like action of (AKIBA), A., 866.
- relation between rennin and (WOHLGEMUTH and SUGIMARA), A., 94.
- relation of, to the substrate (BRIGGS), A., 866.
- inositol in (MOLDAVSKI), A., 641.
- effect of quinine salts on (SMORODINCEV and LEMBERG), A., 94.
- determination of (KAWAHARA and PECZENIK), A., 1060.
- standards for determination of, colorimetrically (SMORODINCEV and ADOVA), A., 322.
- determination of, using Congo-red (KAWAHARA and PECZENIK), A., 1060.
- effect of hydrogen-ion concentration on determination of (SMORODINCEV and ADOVA), A., 94.
- Peptidases* of tissues and serum (STANDENATH), A., 1276.
- Peptides*, constitution of (SCHLACK and KUMPF), A., 853.
- preparation of (SCHÖNHEIMER), A., 716.
- relation of structure to rate of hydrolysis of (LEVENE, SIMMS, and PFALTZ), A., 1265.
- transformations of (BERGMANN and STERN), A., 631, 740, 743; (BERGMANN and ENSSLIN), A., 740; (BERGMANN, KANN, and MICKLEY), A., 1235; (BERGMANN, STERN, and WITTE), A., 1236.
- anhydrides of (SHIBATA), A., 505.
- action of alkali on (LEVENE and PFALTZ), A., 1259.
- Peptisation*, theory of (SEN), A., 124.
- and complex ion formation (DHAR and GHOSH), A., 679.
- Peptones*, physical properties of (ABDERHALDEN and HAAS), A., 959, 960.
- commercial, iodine value of (BERTHELOT and CNAUD), B., 964.
- Perbenzoic acid*, preparation of (LEVY and LAGRAVE), A., 286.
- oxidation of unsaturated compounds by (MEERWEIN, OGALT, PRANG, and SERINI), A., 722.
- sodium salt, instability of (GELARIE and GREENBAUM), B., 384.
- Perborates*. See under *Boron*.
- Perchloric acid* and *Perchlorates*. See under *Chlorine*.
- Percolation*, pore diameter of separating surface in (MÜLLHAUS), B., 615.
- Percolation apparatus* (EVANS), A., 707.
- automatic continuous, for extraction of drugs (RATTRAY), B., 802.
- Perfumes* (FARB. v. BAYER & Co.), (P.), B., 464.
- preparation of (I. G. FARBENIND. and EISENHUT), B., 805.
- from flowers (I. G. FARBENIND.), (P.), B., 770.
- extraction of, from plants and flowers (FORAY), (P.), B., 253.
- with amber odour (CORTI and CHEM. WORKS FLORA), (P.), B., 173.
- Perfusion*, experiments on (PAK), A., 430.
- Perhydriase*, purification of (SBARSKY and MICHLIN), A., 977.
- separation of, from zymase complex (LEBEDEV), A., 1061.
- in colostrum and milk of cows (MICHLIN), A., 433.
- of milk (SBARSKY), A., 202.
- action of, on methylglyoxal (LEBEDEV), A., 542.
- Perhydro-9-phenylfluorene* (IPATIEV and DOLGOFF), A., 949.
- Periodic system*, grouping of elements in (CENTNERSZWER), A., 662.
- in relation to ionisation potentials (ROLLA and PICCARDI), A., 1187.
- modified, and its applications (v. ANTROPOV), A., 773.
- Periodicity*, law of (PETRENKO-KRITSCHENKO and OPOTZKY), A., 1121.
- Permalloy*, magnetic properties of (BINNIE), B., 278.
- magnetostriiction in (McKEEHAN and GIOFFI), A., 891; (McKEEHAN), A., 892.
- comparison of magnetic properties of permalloy and (TSCHERNING), B., 58.
- Permanganates*. See under *Manganese*.
- Permax*, comparison of magnetic properties of permalloy and (TSCHERNING), B., 58.
- Permeability* of living cells (BROOKS), A., 639.
- and electrical properties of membranes (FUJITA), A., 120, 574; (MICHAELIS and DOKAN; MICHAELIS and FUJITA), A., 120.
- reversible, of membranes (GURCHOT), A., 240.
- Permutit*, action of chromium salts on (GUSTAVSON), B., 503.
- Permutites*, vapour pressure and basic exchange in (ROTHMUND), A., 908.

- Perovskia atriplicifolia*, essential oil from the flowerheads of (RAO), B., 803.
- Perowskite, crystal structure of (BARTH), A., 664.
- Peroxides, aromatic, with univalent oxygen (PUMMERER and RIECHE), A., 1135.
- organic (GELISSEN and HERMANS), A., 63, 286, 612.
- syntheses with (v. LITTMANN), A., 165.
- reactions of magnesium organic compounds with (GILMAN and ADAMS), A., 63.
- Peroxydases (BANSI and UCKO), A., 1176; (UCKO and BANSI; WILLSTÄTTER and WEBER), A., 1275.
- heat-stable, from bacteria (CALLOW), A., 643.
- detection of, in milk (BORINSKI), B., 418.
- determination of (WILLSTÄTTER and WEBER), A., 1275.
- determination of, in bacteria (KIRCHNER and NAGEL), A., 979.
- Peru-balsam, preparation of a substitute for (SCHMATOLLA), (P.), B., 299.
- Pervanadic acid. See under Vanadium.
- Perylene, and its derivatives (ZINKE, SPRINGER, and SCHMID), A., 71.
- manufacture of (MARSHALK), (P.), B., 869.
- halogenation of (ZINKE, PONGRATZ, and BENSA), (P.), B., 626*.
- Perylene, di-, tetra-, and hexa-chloro- (PONGRATZ and ZINKE), (P.), B., 974.
- Perylene compounds, manufacture of (ZINKE and BENSA), (P.), B., 569*.
- Perylene dyes, vat (KALLE & Co.) (P.), B., 7; (ZINKE, SCHÜPFER, and BENSA; COMP. NAT. MATIÈRES COLORANTES, and PEREIRA), (P.), B., 205; (SCHÜPFER and BENSA), (P.), B., 433; (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING; ZINKE, HANSELMAYER, and BENSA), (P.), B., 626*.
- Perylenequinones, amino- (ZINKE and BENSA), (P.), B., 626*.
- Pests, materials for combating (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 103, 209; (WEIL; CHEM. FABR. SCHERING, GÖRNITZ, and GOEDEL), (P.), B., 209.
- manufacture of fluids for control of (I. G. FARBENIND.), (P.), B., 893.
- vine, copper liquors for combating (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 103.
- Petrol, determination of molecular weight of (ORMANDY and CRAVEN), B., 227.
- refining of (COX and McDERMOTT), (P.), B., 264.
- dielectric constant of (PÉCHEUX), B., 971.
- action of sulphuric acid on (ORMANDY and CRAVEN), B., 395.
- determination of the calorific power of (CANTONI), B., 860.
- "end-boiling-point," production of, from heavy oils (EGLOFF and HENNY), B., 619.
- analysis of, by means of critical temperatures of solution (AUBERT and AUBRÉ), B., 260.
- See also Gasolino.
- Petrolatum and petrolatum oils, manufacture of (LAVIROTTE), (P.), B., 1005.
- Petroleum, synthesis of, at atmospheric pressure from products of coal gasification (FISCHER and TROPSCH), B., 475.
- purification of (GES. F. WÄRMETECHNIK and UFER), (P.), B., 623.
- refining of (CARROLL), (P.), B., 478.
- by the Edcleanu process (WATERMAN and PERQUIN), B., 259.
- apparatus for (STILSON and STILSON PROCESS CORP.), (P.), B., 352.
- treatment of acid tar from (HALLORAN, DAVIS, DAVIDSON, and STANDARD OIL Co.), (P.), B., 526.
- action of substances used in, on naphtha solutions of pure organic sulphur compounds (WOOD, SHEELY, and TRUSTY), B., 259.
- bleaching, cracking, and desulphurisation of (H. & H. REINOLD), (P.), B., 6, 231.
- cracking of (EGLOFF and UNIVERSAL OIL PRODUCTS Co.), (P.), B., 41; (CLARK and STANDARD DEVELOPMENT Co.), (P.), B., 526; (AULD and DUNSTAN), B., 811.
- by the Dubbs process (MEYER), B., 939.
- apparatus for cracking and distillation of (PAGE and FAYAN), (P.), B., 864.
- still for coking of (YOUNG and TEXAS Co.), (P.), B., 182.
- fractionation of (STRAUS), (P.), B., 41*.
- fractions, relation between boiling point and other properties of (HILL and FERRIS), B., 84.
- distillation of, with gases (DOBRYANSKI and MATUSOVSKI), B., 1002.
- corrosion in (SCHMIDT), B., 1002.
- Petroleum, mobility of ions in flames of (BOUCHER), A., 105.
- emulsification of (BILLINGHAM), (P.), B., 655.
- emulsions, treatment of (HNRICH), (P.), B., 120.
- chemistry of (BIRCH and NORRIS), B., 970.
- naphthenic acids from (TANAKA and NAGAI), B., 37, 307, 653.
- distillates, nitration of (HOPKINS and STANDARD DEVELOPMENT Co.), (P.), B., 721.
- removal of sulphur impurities from (STADNIKOV, GAVRILOV, and RAKOVSKI), B., 575.
- extraction of vanadium from (BALDERSCHWIELER and STANDARD DEVELOPMENT Co.), (P.), B., 133; (OBERLE), (P.), B., 237.
- protoparaffin waxes in (SACHANOV and BESTUSCHEV), B., 523.
- action of ozone on (KITA, ABE, and TADA), B., 475.
- liability to explosion of atmospheres in storage tanks for (WILLIAMS-GARDNER), B., 731.
- artificial, from Balkash sapropelite (ZELINSKI), B., 226.
- Californian, naphthenic acids from gas oil distillate of (TANAKA and NAGAI), B., 307.
- crude, properties of, from producing fields of Western Hemisphere (KRAEMER and CALKIN), B., 348.
- fractionation of (EARL and REEVES), (P.), B., 183.
- distillation of (CLARK and STANDARD DEVELOPMENT Co.), (P.), B., 574.
- dehydration of (EDWARDS; CASON; EDDY and PETROLEUM RECTIFYING Co.), (P.), B., 525.
- preparation of wax-free products from (PETTY and DE LAVAL SEPARATOR Co.), (P.), B., 40.
- partially vaporised crude, effect of pressure and temperature on total volume of (WILSON and SCHNETZLER), B., 523.
- Grosny (SACHANOV), B., 474.
- formolite values of (TARASSOV and RUDENKO), B., 1003.
- high-sulphur, and its products, toxic gases from (SAYERS and others), B., 36.
- Mid-continent, composition of (MABERY), B., 810.
- Nishiyama, naphthenic acids from (TANAKA and NAGAI), B., 37.
- paraffin-base, latent heats of vaporisation of distillates from (LESLIE, GENTESSE, LEGATSKI, and JAGROWSKI), B., 180.
- Persian, aromatic hydrocarbons from (BIRCH and NORRIS), B., 970.
- sulphur compounds in (THIERRY), B., 116.
- bromination of a fraction of (GORDON, BAIRD, and HUNTER), B., 260.
- Peruvian, chemical constitution of a fraction of, boiling between 150° and 350° (SEYER and HUGGETT), B., 653.
- distillation analysis of (VESPER), B., 180.
- detection and measurement of small quantities of vapour of (NEUSBAUM, DE VERTER, and DEAN), B., 261.
- separation of components of (GORDON, BAIRD, and HUNTER), B., 260.
- Petroleum coke. See under Coke.
- Petroleum hydrocarbons. See under Hydrocarbons.
- Petroleum industry, fifty years of (HOWARD), B., 812.
- chlorine in the (BURGESS), B., 428*.
- Petroleum insecticides (GRAY and DE ONG), B., 293.
- Petroleum oils, purification of (SCHLESISCHES KOHLENFORSCHUNGS-INST.), (P.), B., 479.
- and residues, purification of (LAVIROTTE), (P.), B., 40.
- apparatus for refining of (PYZEL and SIMPLEX REFINING Co.), (P.), B., 574.
- treatment of (SOLAR REFINING Co.), (P.), B., 863.
- fractional condensation of (POWER SPECIALTY Co.), (P.), B., 230.
- distillation of (CLARK and STANDARD DEVELOPMENT Co.), (P.), B., 183; (DOWNS), (P.), B., 1006.
- under high vacuum (ZIELEY PROCESSES CORP.), (P.), B., 525.
- with aluminium chloride (McAFEE and GULF REFINING Co.), (P.), B., 431.
- volume correction table for (U.S. BUR. STANDARDS), B., 475.
- cracking of (DAY), (P.), B., 231; (LESLIE and POTTHOFF), B., 810; (DUBBS and UNIVERSAL OIL PRODUCTS Co.), (P.), B., 908; (PYZEL and SIMPLEX REFINING Co.), (P.), B., 941; (KOLSKY), (P.), B., 1004; (HEYL), (P.), B., 1005.
- oxidation of (PETROV and DANILOVICH), B., 571.
- desulphurisation of (RATHER and STANDARD OIL Co.), (P.), B., 526.
- Californian, thermal expansion of (ZEITFUCHS), B., 116.
- specific heats, heats of vaporisation, and critical temperatures of (ZEITFUCHS), B., 181.
- Rumanian, chemical composition of (DANAILA), B., 258.

- Petroleum oils, determination of olefinic, aromatic, and saturated hydrocarbons in (DANAILA and MELINESCU), B., 476*.
- Petroleum products, refining of (BROOKS and CARBIDE & CARBON CHEMICALS CORP.), (P.), B., 120.
- treatment of (BLACK, RIAL, and HOWES), (P.), B., 863.
- and cracked distillates, sulphuric acid absorption and iodine values of (MORRELL and EGLOFF), B., 116.
- determination of unsaturated content of (FRANCIS), B., 811.
- Petroleum sludge, separation of (HECHENBLEKNER and OLIVER), (P.), B., 701, 1005.
- Petroleum spirit, cracked, composition of (MOORE and HOBSON), B., 227.
- action of sulphuric acid on (HOUGHTON and BOWMAN), B., 226.
- determination of unsaturated constituents in (ORMANDY and CRAVEN), B., 227.
- Phanerogams, formation of lactic acid in (NEUBERG and GORR), A., 761.
- heterotropic (BRAUNHAUSER), A., 983.
- Pharbitidin (KATAOKA), A., 1150.
- Pharbitis nil, anthocyanin pigments of (KATAOKA), A., 1150.
- Pharmaceutical preparations, Baroni reaction for neutral glass for containing (TIRELLI), B., 440.
- fluid, determination of residuo in (FIGDOR), B., 383.
- Pharmacology of changes of concentration (JENDRASSIK and ANNAN), A., 91; (JENDRASSIK and AUTAL), A., 755.
- clinical (VEIL and GRAUBNER), A., 1273.
- Phase rule, and its application to osmotic, electro-osmotic, and thermo-osmotic phenomena (DENINA), A., 1102.
- Phaseolus vulgaris*, pigment in seeds of (SKALINSKA), A., 1183.
- Phenacetin, manufacture of, from *p*-chloronitrobenzene (RICHARDSON), B., 689.
- Phenacetic acid, *m*-chloro- and *m*-nitro- (MUENZEN, CERECEDO, and SHERWIN), A., 972.
- Phenacyl bromide, condensation reactions with (R. M. and J. N. RAY), A., 168.
- 5-Phenacyl-5-ethylbarbituric acid (KEACH and HILL), A., 1259.
- 5-Phenacyl-5-*n*-propylbarbituric acid (KEACH and HILL), A., 1259.
- 1-Phenacylpyridone-2-phenacylimine, and its salts (TSCHITSCHIBABIN), A., 1153.
- 5:6-Phenanthra-1:4:7-benzheptatriazine (GUHA and DE), A., 743.
- Phenanthraphenazine, bromonitro- (BORSCHKE and FESKE), A., 605.
- Phenanthra-*o*-phenylenedihydrazone (GUHA and DE), A., 743.
- Phenanthraquinone, catalytic hydrogenation of (V. BRAUN and BAYER), A., 172.
- action of hydrazine hydrate on (DUTT), A., 174.
- azides (BRASS), (P.), B., 868.
- Phenanthraquinone, aminohydroxy- derivatives and 1:4-dihydroxy-, derivatives of (BRASS), (P.), B., 868.
- 1:4-aminohydroxy- and 1:4-dihydroxy-, diacetoborates (DIMROTH), A., 298.
- 2:4:7-trinitro-, and its quinoxaline derivative (CHRISTIE and KENNER), A., 408.
- Phenanthraquinones, 2:7- and 4:5-dinitro-, nitration of (CHRISTIE and KENNER), A., 408.
- Phenanthraquinone dyes, mordant, manufacture of (BRASS), (P.), B., 868.
- 6:7-Phenanthrazinoindazole (FIESER), A., 625.
- Phenanthrene, crude, artificial resins from (BAKELITE GES. and FLORENZ), (P.), B., 502.
- Phenanthrene alkaloids, syntheses in (ROBINSON and SHINODA), A., 1048.
- Phenanthridonecarboxylic acid, diamino- (CHRISTIE and KENNER), A., 408.
- o*-Phenanthroline ferrous picrate (KÜSTER, ERMLE, v. ROLL, and SCHILLER), A., 822.
- dl*- and *l*-*o*-Phenanthrolinediethylenediaminecobaltic salts (JAEGER), A., 1157.
- Phenarsazinic acid, 1-amino-, dihydrochloride, and 1-nitro-, and its salts (BURTON and GIBSON), A., 1162.
- Phenazine, 3-amino-, 2-*o*-tolyluride of (SIRCAR and DE), A., 417.
- Phenazineazine (DUTT), A., 831.
- Phenazineazineazine (DUTT), A., 831.
- 2:3-Phenazinoazoisimide (SIRCAR and DE), A., 417.
- 4:5-Phenazino-2-phenyliminazole, and 3'-nitro- (SIRCAR and DE), A., 417.
- Phenazinoquinoxaline, dihydroxy- (SIRCAR and DE), A., 417.
- o*-Phenetidine, 4-chloro-, benzoyl derivative (RAIFORD and COLBERT), A., 1242.
- p*-Phenetidine, condensation of dextrose and (AMADORI), A., 60.
- p*-Phenetolecarbamide. See Dulcin.
- p*-Phenetolesulphonylacetophenone, and its derivatives (TRÖGER and DIMITROV), A., 78.
- p*-Phenetylacetamidine, and its phenyluride (HILL and RABINOWITZ), A., 517.
- p*-Phenetyldiethylacetamidine (HILL and RABINOWITZ), A., 517.
- p*-Phenetylphenylacetamidine (HILL and RABINOWITZ), A., 517.
- p*-Phenetylsulphonyl- β -4-nitro-3-hydroxyphenylacrylonitrile (TRÖGER and FROMM), A., 69.
- p*-Phenetylvaleramidine, and its phenyluride (HILL and RABINOWITZ), A., 517.
- Phenol, scattering of light by (KITCHING), A., 15.
- dielectric constants of benzene solutions of (PARTINGTON and RULE), A., 661.
- molecular association of, in benzene and water (ENDO), A., 469.
- mutual solubility of water and (HILL and MALISOFF), A., 571.
- effect of salts on the equilibrium and critical solution temperature of, in water (CARRINGTON, HICKSON, and PATTERSON), A., 18.
- equilibria of, with water and the cresols (RHODES, WELLES, and MURRAY), A., 17.
- recovery of, from gas liquor and other waste liquors (HEFFNER and TIDY), (P.), B., 624*.
- recovery of cresols and (CRAWFORD), (P.), B., 527.
- reaction between azobenzene hydrochloride and (PUMMERER and DALLY), A., 1133.
- reaction between lead subacetate and (MEDLEY), B., 802.
- action of methyl alcohol on, at high temperatures (IPATIEV, ORLOV, and RAZUBAIEV), A., 281.
- action of triacetin on (KAWAI), A., 281.
- manufacture of condensation products from (CARTER and KARPEN & BROS.), (P.), B., 202; (BROWN and SILUMINITE INSULATOR CO.), (P.), B., 338.
- di*- and *tri*-sulphonyl chlorides (POLLAK, GEBAUER-FÜLNEGG, and RIESZ), A., 514.
- and amino-, bromo-, chloro-, and nitro-derivatives, α -naphthyl urethanes from (FRENCH and WITTEL), A., 830.
- determination of, in crude cresol (QVIST), B., 624.
- Phenol, *o*-amino-, acyl derivatives of (NELSON and DAVIS; NELSON and AIRKENHEAD), A., 833.
- p*-amino-, and its derivatives, acetic esters of (GALATIS), A., 609.
- 3:4:5-tribromo-, and its methyl ether (KOHN and SOLTÉSZ), A., 395.
- tribromo- and trichloro-, bromides (LAUER), A., 514.
- bromiodo-, chlorobromo-, and chloriodo-derivatives (KOHN and ROSENFELD), A., 282.
- bromiodo-, chlorobromo-, chlorobromonitro-, and chloriodo-derivatives, and their derivatives (KOHN and SUSSMANN), A., 832.
- 3-bromonitro-derivatives and 3-chloro-2-nitro-, and their salts and derivatives (HODGSON and MOORE), A., 281.
- 3:5-dibromo-2:4-dinitro-, and 2:4:6-trichloro-3:5-dinitro-, and its salts (KOHN and HELLER), A., 282.
- m*-chloro-, use of, for preparation of dye intermediates (HODGSON), B., 625*.
- p*-chloro-, sulphonation of (GAUNTLETT and SMILES), A., 164.
- o*-, *m*-, and *p*-chloro-, antiseptic action of (KURODA), A., 756.
- 2:4:6-trichloro-, oxidation of (HUNTER and MORSE), A., 839.
- o*-chloroamino-, acetyl derivative (v. AUWERS and FRESE), A., 530.
- 2-chloro-5-bromo-, and 2-chloro-5-iodo- (KRAAY), A., 1034.
- 3:5-dichloro-2:4-dinitro-, and its derivatives (BORSCHKE and TRAUTNER), A., 390.
- 2:6-diiodo-*p*-amino-, salts of (KALB, SCHWEIZER, ZELLNER, and BERTHOLD), A., 1152.
- p*-nitro-, condensation of, with chloral (CHATTAWAY), A., 1242.
- as mould preventive for rubber (STEVENS), B., 554.
- 2:4-dinitro-, derivatives of (FREUDENBERG and HESS), A., 935.
- nitro-*o*-amino-derivatives, acetyl derivatives of (C. K. and E. H. INGOLD), A., 833.
- thio-. See Phenyl mercaptan.
- Phenols, preparation of, from magnesium organic compounds (IVANOV), A., 395.
- manufacture of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 433.
- from benzene hydrocarbons (HALE and DOW CHEMICAL CO.), (P.), B., 910.
- and their ethers, manufacture of condensation products of azo-compounds and (PUMMERER), (P.), B., 817.
- recovery of, from ammoniacal liquor (HEFFNER), (P.), B., 147; (CRAWFORD), B., 348; (HEFFNER, TIDY, and RAINY-WOOD PROCESS CORP.), (P.), B., 862.
- from tar oils (PAPILLON), (P.), B., 232.

- Phenols, separation of, from oils (V.L. OIL PROCESSES, LUCAS, and LOMAX), (P.), B., 42; (GELSENKIRCHENER BEROWERKS and HOCK), (P.), B., 148.
from low-temperature tar (ZECHE STINNES; IRINYI), (P.), B., 184.
removal of, from waste waters (PREISS), (P.), B., 42.
halogenation of (SOPER and SMITH), A., 831.
velocity of nitration of (ZAWIDZKI), A., 364.
nitrosation of (HODGSON and MOORE), A., 1034.
oxidation of (PUMMERER and RICHE), A., 1135.
by tissues (HANDOVSKY), A., 1170.
molecular compounds of (WEISSENBERGER, SCHUSTER, and WOGNOFF), A., 282; (WEISSENBERGER, SCHUSTER, and HENKE), A., 283.
condensation products of aldehydes and (SHONO), B., 595, 680.
condensation of formaldehyde with (BARTHÉLEMY), B., 955; (SOC. VERRERIES FOLEMBRAY; BRUHAT; ROFF), (P.), B., 955.
manufacture of resins from methylal and (CARTER, COXE, and KARPEN & BROS.), (P.), B., 202.
resinous condensation products from sulphur and (SOC. CHEM. IND. IN BASLE), (P.), B., 203.
action of chlorosulphonic acid on (POLLAK, GEBAUER-FÜLNEGG, and RIESZ), A., 514; (POLLAK, GEBAUER-FÜLNEGG, and BLUMENSTOCK), A., 832; (POLLAK and GEBAUER-FÜLNEGG), A., 1244.
isolation of, from mixtures (DEFFE SÖHNE and ZEITSCHER), (P.), B., 691.
effect of hydrogen-ion concentration on the antiseptic action of (KURODA), A., 541.
variations in excretion of (HOLCK), A., 1269.
alkylated, emulsions of, for use as disinfectants, fungicides, and insecticides (VIDAL), (P.), B., 960.
monohydric, velocity of benzylation of (BERNOULLI and GOAR), A., 1108.
separation of, from ethers of dihydric phenols (HUERRE), A., 832.
dihydric, and their ethers, molecular compounds of (WEISSENBERGER, HENKE, and BREGMANN), A., 466.
polyhydric, introduction of alkyl and aryl groups into (KLARMANN), A., 1135.
molybdophosphotungstic acid reagent for (BEZSSONOFF), A., 722.
reactions for (BRAUER and RUTHSATZ), A., 1036.
colour reactions of sodium nitroprusside with (EKKERT and WINKLER), A., 1033.
identification of, with the spectroscope (WALES and PALKIN), A., 615.
analysis of solutions of, containing soap (DI STEFANO), B., 221.
determination of, in crude ammonia liquor (ULRICH and KATHER), B., 306.
determination of, in essential oils, by means of magnesium methyl iodide (ZEREVITINOV), B., 720.
- Phenols, amino-, diazotisation of (RHEINISCHE KAMFFER-FABR., SKRAUP, and STEINRUCK), (P.), B., 867.
amino- and nitroamino-, acetyl derivatives (HEWITT and KING), A., 746.
o-amino-, acetyl derivatives, mercuration of (MASCHMANN), A., 1265.
bromo- (KOHN and HELLER), A., 281; (KOHN and ROSENFELD), A., 282; (KOHN and GRÜN), A., 284; (KOHN and SOLTÉSZ), A., 395; (KOHN and SCHWARZ), A., 521; (KOHN and SUSSMANN), A., 831; (KOHN and SEGEL), A., 832.
chloro-, molecular compounds of (WEISSENBERGER, SCHUSTER, and LIEBACHER), A., 465.
tastes due to, in water supplies (CUNLIFFE), B., 301.
3:5-dihalogeno-, and halogenonitro-, and their acetates and benzoates (HODGSON and WIGNALL), A., 1034.
nitro-, binary mixtures with (WEISSENBERGER, HENKE, and KAWENOKI), A., 787.
cobalt compounds of (BERNARDI and PIACENTINI), A., 721.
polynitro-, influence of acid character of, on the formation of glucosides (GLASER and THALER), A., 608.
- isoPhenoltetrachlorophthalein, and its derivatives (ORNDORFF and PARSONS), A., 200.
Phenolglutareins (DUTT), A., 725.
Phenol-indophenols, and their dichloro-derivatives (GIBBS, COHEN, and CANNAN), A., 60.
4:4'-Phenol- α -naphtholphthalein, and its methyl ethers (MOM), A., 405.
- Phenol- β -phenylpyridophthalein (TEWARI and DUTT), A., 1151.
Phenolphthalein, purification of (SCHUDEL and NAT. ANILINE & CHEMICAL Co.), (P.), B., 578.
amorphous (PUTT), (P.), B., 463.
n- and iso-Phenolphthaleins, absorption spectra of (ORNDORFF, GIBBS, and McNULTY), A., 884.
Phenolphthalin, salts of (FINZI and ACCARINI), A., 1140.
Phenolphthalol, preparation of, and reaction with oxydases and peroxydases (BUCKNER), A., 733.
Phenolsuccineins (DUTT), A., 725.
Phenol-4-sulphonic acid, 3-bromo-2:5:6-trinitro-, potassium salt (HODGSON and MOORE), A., 281.
Phenoltetra-acetylglucosides, dinitro- (GLASER and THALER), A., 608.
Phenosafranine, desensitising by (CRABTREE and DUNDON), B., 853.
Phenosafranine, amino- (BERETTA), A., 307.
Phenoxide, ammonium, and o- and p-nitro- (BRINER, AGATHON, and FERRERO), A., 1241.
potassium, preparation of (ERLENMEYER), A., 831.
action of, on aliphatic esters (GYNGELL), A., 1134.
Phenoxides, sodium, substituted, reactions of ethyl iodide with (GOLDSWORTHY), A., 805.
Phenoxide liquors, purification of (ZECHE STINNES and ULRICH), (P.), B., 815.
Phenoxetellurine, and its derivatives, and 5:5-dibromo-, 5:5-dichloro-, and 5:5-diiodo- (DREW), A., 311.
Phenoxy-groups, influence of, on taste (LANGE and REED), A., 606.
Phenoxyacetic acid, 2:3-dihydroxy-, and its methyl ester (CHRISTIANSEN), A., 725.
2-Phenoxyanisole, 3:5-dinitro- (BORSCHKE and FESKE), A., 605.
p-Phenoxybenzhydrylamine, and its hydrochloride (TORRÉS y GONZALÉS), A., 396, 609.
p-Phenoxybenzophenone, and its oxime (TORRÉS y GONZALÉS), A., 396, 609.
2-Phenoxybenzoquinone, 6-chloro-2:2':4':6'-trichloro- (HUNTER and MORSE), A., 839.
p-Phenoxybenzoylacrylic acid, and its ethyl ester, and their derivatives (RICE), A., 270.
p-Phenoxybenzoylpropionic acid, esters of, and α -hydroxy- (RICE), A., 270.
p-Phenoxy-carbamides (LANGE and REED), A., 606.
4'-Phenoxydiphenyl, 4-bromo- and 4-chloro-2:3'-dinitro- (LE FÈVRE and TURNER), A., 1029.
Phenoxyethyl nitrate, trinitro- (LEWIS and DU PONT DE NEMOURS & Co.), (P.), B., 78.
2-Phenoxy-methylbenzimidazole (FARBENFABR. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 850.
2-Phenoxy-methyl-5-ethoxybenzimidazole (FARBENFABR. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 850.
2-Phenoxy-1:6:8-trinitronaphthalene (VAN DER KAM), A., 1240.
p-Phenoxyphenylcarbamide (LANGE and REED), A., 606.
 β -3-Phenoxyphenylhydroxylamine, 4:6-dinitro-, and its salts and acetyl derivative (BORSCHKE and FESKE), A., 606.
o-Phenoxyphenylmethylchloroarsine (ROBERTS and TURNER), A., 852.
 α -p-Phenoxyphenyl- β - α -naphthylcarbamide (LANGE and REED), A., 606.
 α -p-Phenoxyphenyl- β -phenylcarbamide (LANGE and REED), A., 606.
 α -p-Phenoxyphenyl- β -phenylthiocarbamide (LANGE and REED), 606.
 β -4-Phenoxyphenylpropionic acid, α -amino- β -4-hydroxy-, and its hydrochloride (HARNOTON), A., 725.
p-Phenoxyphenyltelluritrichloride (DREW), A., 311.
p-Phenoxyphenylthiocarbamide (LANGE and REED), A., 606.
 α -p-Phenoxyphenyl- β -p-tolylcarbamide (LANGE and REED), A., 606.
p-Phenoxythiocarbamides (LANGE and REED), A., 606.
2-Phenoxytoluene, 3:5-dinitro- (BORSCHKE and FESKE), A., 605.
Phenthiarsine, 10-chloro- (ROBERTS and TURNER), A., 852.
Phenyl 4-acetamidonaphthyl disulphide, 2:5-dibromo- (CHILD and SMILES), A., 1244.
acetylacetyl sulphides, mono- and di-chloro- and o-nitro- (BROOKER and SMILES), A., 947.
alkyl ethers (HAHL and WINTHROP CHEM. Co.), (P.), B., 721.
nitro-, preparation of (VEREIN FÜR CHEM. & METALL. PRODUKTION), (P.), B., 771.

- Phenyl alkyl sulphides and sulphones, *m*-amino-, acetyl derivatives (PALMER and REID), A., 514.
- allyl ether, 4-chloro-*o*-nitro- (RAIFORD and COLBERT), A., 1243.
- allyl ethers, transformation of (CLAISEN and TIETZE), A., 1241.
- migration of *o*-allyl group in (CLAISEN and TIETZE), A., 1034.
- benzyl ether, chloro-, and 2:4-dichloro- (BAW), A., 1034.
- benzyl disulphide, *o*-nitro- (FOOTER and SMILES), A., 159.
- β -bromoallyl ether (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- $\Delta\beta$ -butenyl ether (CLAISEN and TIETZE), A., 1242.
- diphenylmethyl sulphide, sulphone, and sulphoxide (ZECHMEISTER and ROM), A., 720.
- ethers, condensation of carbinols with (SZÉKI), A., 285.
- mercaptan, *o*-amino-, action of, with aldehydes, ketones, and *gem*-dihalides (BOGERT and STULL), A., 183.
- and disulphide, *o*-amino-, condensations of (BOGERT and STULL), A., 310.
- 2:4-dinitrobenzyl ether, *p*-nitro- (KRASSOVSKI and PLISSOV), A., 949.
- oxide, 2:4-diamino-, and 2-nitro-4-amino-, and their derivatives (BOGERT and EVANS), B., 354.
- selenocyanate, *p*-amino-, and *p*-bromo- (CHALLENGER, PETERS, and HALÉVY), A., 966.
- sulphide, 2:4-diamino- (BOGERT and EVANS), B., 354.
- sulphur chloride. See Benzene, chlorothiol.
- p*-tolyl ether, *p*-hydroxy-, and its benzoyl derivative (HARINGTON), A., 724.
- p*-tolyl sulphoxide, *dl*-*p*-amino-, resolution of, and its derivatives (HARRISON, KENYON, and PHILLIPS), A., 1031.
- triphenylmethyl sulphoxide (ZECHMEISTER and ROM), A., 720.
- 2-*N*-Phenyl-2:3-acenaphtha-1:2:3-triazole, and its derivatives, and 2-*p*-bromo- and 2-*p*-chloro- (CHARRIER and BERETTA), A., 307.
- Phenyl-*o*-acenaphthylcarbinol (DZIEWOŃSKI and RYCHLIK), A., 70.
- Phenyl-*o*-acenaphthyl ketone. See 3-Benzoylacenaphthene.
- Phenyl-*o*-acenaphthylmethane, See 3-Benzylacenaphthene.
- Phenylacetaldehyde, action of ultra-violet light on (FRANKE and SIGMUND), A., 292.
- polymerisation of (ENKLAAR), A., 614.
- Phenylacetamidophenylarsinic acid, *pp'*-nitro- (ÉTABL. POULENC FRÈRES), (P.), B., 899.
- Phenylacetic acid, thallous salt (WALTER), A., 712.
- p*-cumyl ester (BERT), A., 285.
- Phenylacetic acid, 3:5-dichloro-2:4-dinitro-, methyl ester (BORSCHÉ and TRAUTNER), A., 390.
- Phenylacetic acids, *m*-amino-, *m*-chloro-, *m*-hydroxy-, and *m*-nitro-, fate of, in the organism, and their derivatives (MUENZEN, CERECEDO, and SHERWIN), A., 972.
- Phenylacetoacetic acid, 3:5-dichloro-2:4-dinitro-, ethyl ester (BORSCHÉ and TRAUTNER), A., 390.
- 2-Phenyl-3-*o*-acetoxybenzylidone, and its oxidation products (WEISS, GROBSTEIN, and SAUERMAN), A., 401.
- Phenylacetylene, condensations of, with primary amines (KRASYSKI and KIPRIANOV), A., 158.
- use of, for preparation of solutions of medicaments insoluble or difficultly soluble in water (SOC. CHEM. IND. IN BASLE), (P.), B., 341.
- 1-Phenyl-3-acetylhydantoin (BILTZ and SLOTTA), A., 1046.
- Phenylacetylurethane (BASTERFIELD, WOODS, and WRIGHT), A., 1132.
- 10-Phenylacridone, chloro-derivatives (GOMBERG and TABERN), A., 738.
- α -Phenylacrylic acid, α -*p*-nitro- (MANNICH and STEIN), A., 165.
- l*-Phenylalanine, 3:4-dihydroxy-, from tyrosine (RAFER), A., 977.
- 3:4:5-trihydroxy-, synthesis of (WASER, LABOUCHERE, and SOMMER), A., 67.
- Phenylalanine series (WASER), A., 65; (WASER, LABOUCHERE, and SOMMER), A., 67.
- Phenylalanine-ethylamide, and its pierate (SIGMUND and WESSELY), A., 960.
- Phenylalanine-*l*-tyrosine anhydride (SIGMUND and WESSELY), A., 960.
- Phenylalanylaminooacetal, and its pieronolate (SIGMUND and WESSELY), A., 960.
- d*- and *l*-Phenylalanyl-*d*-glutamic acids, and the *l*-anhydride (BERGMANN, STERN, and WITTE), A., 1236.
- dl*-Phenylalanylglycine hydrobromide (BERGMANN, STERN, and WITTE), A., 1236.
- Phenylalanyphenylalanineanilide, and its pierate (SIGMUND and WESSELY), A., 960.
- d*- and *l*-Phenylalanyl-*l*-tyrosine anhydrides (BERGMANN, STERN, and WITTE), A., 1236.
- N*: ω -Phenylallophanic acid, ethyl ester (MERCK and DIEHL), (P.), B., 931.
- α -Phenyl- α -allyl-*n*-valeramide (LUMIÈRE and PERRIN), A., 1273.
- Phenyl 3-aminobenzyl ketone, 4-amino-, diacetyl derivative (HARRISON), A., 827.
- 2-Phenyl-4-aminoethylquinoline, preparation of (CHEM. FABR. VORM. SCHERING), (P.), B., 305.
- 2-Phenyl-4- β -aminoethylquinoline, synthesis of (JOHN), A., 846.
- 3-Phenylamino-5-methylphenyl 1-mercaptan, 6-amino- (HERZ and GRASSELLI DYESTUFF CORP.), (P.), B., 736.
- Phenyl *m*- and *p*-aminostyryl ketones, acetyl, benzoyl, and formyl derivatives, derivatives of (DILTNEY and BERRES), A., 728.
- d*- α -Phenylamyl mercaptan (LEVENE and MIKESKA), A., 1226.
- Phenylamylcyanamide (v. BRAUN and MUJAJIN), A., 829.
- 2-Phenyl-3-anisolesulphonylquinolines, and their salts (TRÖGER and DIMITROV), A., 78.
- Phenyl-*p*-anisyldiacetaldehyde, and its semicarbazone (ORÉKHOV and TIFFENEAU), A., 172.
- Phenylanisyldiveratrocoprynes, and their salts (BRADLEY and ROBINSON), A., 1145.
- 5-Phenyl-*p*-anisylolethylene. See *p*-Methoxystilbene.
- α -Phenyl- β -anisylolethylene oxide (TIFFENEAU and LÉVY), A., 383, 818.
- α -Phenylanisyl glycol, conversion of, into *p*-methoxyhydrobenzoin (ORÉKHOV and TIFFENEAU), A., 172.
- N,N'*-Phenyl-*p*-anisyguanidine (KLINGNER), A., 946.
- Phenyl-*p*-anisy-2-*o*-hydroxy-*p*-anisylopyridines (DILTNEY, FRÖDE, and KOENEN), A., 1254.
- 1-Phenyl-4-*p*-anisy-2:6-di-*o*-hydroxy-*p*-anisylopyridinium picrate (DILTNEY, FRÖDE, and KOENEN), A., 1254.
- Phenyl-*p*-anisy-2-*o*-hydroxy-*p*-anisylopyrylium salts (DILTNEY, FRÖDE, and KOENEN), A., 1254.
- 4-Phenyl-6-*p*-anisy-2-*o*-hydroxy-*p*-tolylpyridine (DILTNEY, FRÖDE, and KOENEN), A., 1254.
- 4-Phenyl-6-*p*-anisy-2-*o*-hydroxy-*p*-tolylpyrylium salts and derivatives (DILTNEY, FRÖDE, and KOENEN), A., 1254.
- α -Phenyl-*o*-anisy- α -naphthylguanidine, and its sulphate (KLINGNER), A., 946.
- 9-Phenylanthracene, 10-bromo- (COOK), A., 1131.
- di*- and *tri*-chloro- and dichlorobromo-derivatives (BARNETT and MATTHEWS), A., 618.
- Phenylanthranilic acid, derivatives of (GOLDSTEIN and RODEL), A., 1138.
- 9-Phenylanthranil acetate, 1:5-dichloro- (BARNETT and MATTHEWS), A., 617.
- 9-Phenylanthrone, chloro-, chlorobromo-, chlorohydroxy-, and chloronitro-derivatives (BARNETT and MATTHEWS), A., 617.
- Phenylantimonic acid, *p*-amino-, acetyl derivative, compounds of (BRAHMACHARI and DAS), A., 541.
- Phenylarsenious oxide, 4-amino-, 4'-toluenesulphonyl derivative, 3'-mono- and 3:3'-di-amino-derivatives of (HEWITT, KING, and MURCH), A., 851.
- o*-bromo- (BURTON and GIBSON), A., 418.
- p*-bromo- and *p*-chloro- (HUNT and TURNER), A., 186.
- 5-iodo-3-amino-4-hydroxy-, acetyl derivative, and 5-iodo-3-nitro-4-hydroxy- (MACALLUM), A., 965.
- Phenylarsinic acid, *p*-amino-, amino-, and nitro-anisoyl, di-amino- and dinitro-benzoyl and amino- and nitro-toluyol derivatives of (KING and MURCH), A., 186.
- and aminohydroxy-, benzene, and toluene-sulphonyl derivatives, and their amino- and nitro-derivatives (HEWITT, KING, and MURCH), A., 851.
- 3:4-diamino-, acyl derivatives of (LEWIS and BENT), A., 628.
- pp'*-diamino-, benzoyl derivative (ÉTABL. POULENC FRÈRES), (P.), B., 899.
- aminohydroxy-, acetyl derivative, alkaloidal salts of (ÉTABL. POULENC FRÈRES), (P.), B., 769.
- 3-amino-4-hydroxy-, bismuth salt (MASCHMANN), A., 311.
- N*-acyl derivatives of, and their salts (RAIZISS and FISHER), A., 627.
- and 3:5-diamino-4-hydroxy-, acetyl derivatives, mercury compounds of (MASCHMANN), A., 1265.
- 3-chloro-5-amino-4-hydroxy- (I. G. FARBENIND.), (P.), B., 932.
- p*-hydroxy-, quinine salt (HOFFMANN-LA ROCHE & Co.), (P.), B., 996.
- 5-iodo-3-amino-4-hydroxy-, and its salts and derivatives (MACALLUM), A., 965.

- Phenylarsinic acids, substituted, preparation of soluble salts of (STICKINGS and MAX & BAKER, LTD.), (P.), B., 645.
 aminohydroxy-, and their arylamides (HEWITT and KING), A., 746.
- 2-Phenylazoacenaphthene, 3-amino-2-*p*-bromo-, -2-*p*-chloro-, and -2-*p*-nitro- (CHARRIER and BERETTA), A., 308.
- 4'-Phenylazodiphenylamine, 2:4-*d*-nitro-, formation of phenazine derivatives from (BERETTA), A., 307.
- Phenylazoflavinduline chloride, nitro- (BERETTA), A., 307.
- Phenylazoisimide, 3:4-dichloro-6-nitro- (MÜLLER and HOFFMANN), A., 163.
- Phenylazoxycarboxylamide, 3:5-dibromo-*p*-hydroxy-, and *p*-hydroxy-, tautomerism of (PIERONI and BUZZI), A., 285.
- 1-Phenylbarbituric acid, and monobromo-, and its hydrazide and dibromo- (MACBETH, NUNAN, and TRAILL), A., 846.
- 2-Phenyl-1:3-benzodithiole, and its 2-oxide (HURTLEY and SMILES), A., 948.
- 2-Phenyl-1:3-benzodithiole-1-sulphonium salts (HURTLEY and SMILES), A., 948.
- N*-Phenylbenziminophenyl thioether (CHAPMAN), A., 1138.
- Phenylspiro-2:2'-benzonaphthadipyran (DILTHEY, BERRES, HÖLTERHOFF, and WÜBKEN), A., 1255.
- 1-Phenylbenzoxazole methiodide (CLARK), A., 309.
- 2-Phenylbenzooxazole, 4-*mono*- and 4:6-*di*-nitro- (MEISENHEIMER, ZIMMERMANN, and v. KUMMER), A., 405.
- 1-Phenylbenzthiazole, and 5-amino-, 5-bromo-, and 5-nitro-, and their bromides (HUNTER), A., 626.
- 2-Phenylbenzthiazole, 2-*m*-amino-, 6-chloro-, 2-*p*- and 6-hydroxy-, and 2-*m*-nitro- (BOGERT and CORBITT), A., 531.
- 1-Phenylbenzthiazolearsinic acids, and amino-, hydroxy-, and nitro- (BOGERT and CORBITT), A., 187.
- Phenylbenzylarsinic acid, *l*-menthylamine and strychnine salts (ROBERTS, TURNER, and BURY), A., 852.
- α -Phenyl- β -benzylbutane- β -*γ*-diol (LÉVY), A., 399.
- α -Phenyl- β -benzylbutan-*γ*-ol (LÉVY), A., 399.
- α -Phenyl- β -benzylbutan-*γ*-one, and its semicarbazone (LÉVY), A., 399.
- Phenylbenzyl-diethylphosphonium chloride (MEISENHEIMER), A., 1237.
- Phenylbenzyl-dimethylammonium chloride, benzylation of phenols with (BAW), A., 1034.
- Phenylbenzyl-dimethylphosphonium chloride (MEISENHEIMER), A., 1237.
- Phenylbenzylethylamine *N*-oxides, salts of (MEISENHEIMER, GLAWE, GRESKE, SCHORNING, and VIEWEG), A., 1240.
- Phenylbenzylethylenediamine, and its salts (GRÄNACHER, SCHELLING, and SCHLATTER), A., 78.
- β -Phenyl- α -benzylethyl ethyl ketone (MAXIM), A., 837.
- Phenylbenzylethylphosphine oxide (MEISENHEIMER), A., 1237.
- 2-Phenyl-3-benzylidenehydrazine, and its oxidation products (WEISS, GROBSTEIN, and SAUERMANN), A., 401.
- 3-Phenyl-2-benzylidene (BETZIECHE and EHRLICH), A., 1234.
- 2-Phenyl-3-benzylidene, and hydroxy- (WEISS, GROBSTEIN, and SAUERMANN), A., 401.
- Phenylbenzyl ketimine, 2:4-*di*hydroxy-, hydrochloride (KLARMANN and LEHN & FINK, INC.), (P.), B., 931.
- Phenyl benzyl ketone, and its oxime (TORRES y GONZÁLES), A., 610.
- Phenyl benzyl ketone, 5-chloro-2-hydroxy- (WITTIG, BANGERT, and RICHTER), A., 301.
- 2:4-*di*hydroxy- (KLARMANN and LEHN & FINK, INC.), (P.), B., 931.
- d*- and *l*-Phenylbenzylmethylamine *N*-oxides, salts of (MEISENHEIMER, GLAWE, GRESKE, SCHORNING, and VIEWEG), A., 1240.
- Phenylbenzylmethylphosphonium salts (MEISENHEIMER), A., 1237.
- Phenylbenzylmethylphosphine oxides (MEISENHEIMER), A., 1237.
- l*-Phenylbenzylmethylphosphonium *d*-camphorsulphonate, hydroxy- (MEISENHEIMER), A., 1237.
- β -Phenyl- α -benzylpropiondiethylamide. See Dibenzylacetdiethylamide.
- β -Phenyl- α -benzylpropionic acid. See Dibenzylacetic acid.
- Phenyl α -bis-2:5-dichlorophenylthiolbenzyl ketone (BROOKER and SMILES), A., 948.
- Phenylbromoacetic acid, action of water on (WARD), A., 805.
- Phenyl- β -bromosallylthiocarbamide (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
- 2-Phenyl-3- α -bromobenzylidene (WEISS, GROBSTEIN, and SAUERMANN), A., 401.
- Phenyl-*di*bromohydroxybenzylhydrazines (KOH and ROSENFELD), A., 282.
- 10-Phenyl-9-bromomethylantracene (BARNETT and MATTHEWS), A., 1030.
- α -Phenyl- β -dibromo-1-naphthylethylene, β -bromo- (RUGGLI and REINERT), A., 391.
- 8-Phenyl- α -bromophenyl- Δ -butadienes, nitro- α -cyano- (NEBER and PAESCHKE), A., 1120.
- 8-Phenyl- α -bromophenyl- Δ -butenes, *d*-nitro- α -cyano- (NEBER and PAESCHKE), A., 1120.
- 1-Phenyl-3-*p*-bromophenyl-1:2:4-triazole, 5-hydroxy- (GASTALDI and PRINCIVALLE), A., 1261.
- 8-Phenyl- Δ -butene, β -bromo- (JOHNSON and McEWEN), A., 495.
- β -Phenyl- Δ -butenoic acid, and its derivatives (JOHNSON and KON), A., 1245.
- 8-Phenylbutene, α -bromo- and α -iodo- (GRIGNARD and PERRICHON), A., 382.
- 8-Phenylbutyl *p*-nitrobenzoate (KIRNER), A., 611.
- Phenylisobutylaniline (v. BRAUN and MURJAHN), A., 829.
- 8-Phenyl-*n*-butyldimethylarsine, derivatives of (ROBERTS, TURNER, and BURY), A., 852.
- γ -Phenylbutyramide, α -cyano- (LINSTAD and WILLIAMS), A., 1245.
- Phenylbutyrylcarbinols, and their derivatives (TIFFENEAU and LÉVY), A., 71.
- Phenylcarbamic acid, chloral ethoxide ester (KALLE & Co. and SPRÖNGERTS), (P.), B., 901.
- dimethylaminophenyl esters, and their derivatives (STEDMAN), A., 974.
- Phenylcarbazinic acid, chloroalkyl esters (DOX), A., 963.
- 4-Phenyl-4-carbethoxybispiperidinium-1:1'-spirans, salts of (MILLS and WARREN), A., 178.
- Phenylcarbimide, action of, on diketopiperazines (LUDTKE), A., 306.
- reaction of, with Schiff's bases (LANGE), A., 1158.
- 1-Phenyl-4-*o*-carboxyphenyl-1:2:3-triazole-5-carboxylic acid (CHARRIER, BERETTA, and GISELLA), A., 848.
- Phenylcarbylamine, action of, with pernitrosomenthone (PASSERINI), A., 175.
- action of, with 2-hydroxy-1-naphthaldehyde (PASSERINI), A., 952.
- Phenylchloroacetic acid, action of water on (WARD), A., 805.
- Phenylchloroarsine, *p*-bromo- and *p*-chloro- (HUNT and TURNER), A., 186.
- CC-Phenylchlorocrotonylbarbituric acid (URSUM, SCHÜTZ, TAUB, and WINTHROP CHEMICAL CO.), (P.), B., 609.
- Phenyl α -5-chloro-2-methoxyphenylthiol- α -2:5-dichlorophenylthiol-ketone (BROOKER and SMILES), A., 948.
- α -Phenyl- β -5-chloro-2:4-dinitrophenyl- α -methylhydrazine (RESE-GOTTI), A., 1195.
- α -Phenyl- γ -*p*-chlorophenylbutyric acid, β -hydroxy- γ -oximino-, derivatives of (KÖHLER and SHOJAN), A., 1140.
- Phenylchlorophenyldiveratocopyrines (BRADLEY and ROBINSON), A., 1145.
- Phenylchlorostibine hydrochloride and its diazotisation product (SCHMIDT and HOFFMANN), A., 534.
- Phenylchlorostibine, 4-chloro-3-amino-, hydrochloride (SCHMIDT and HOFFMANN), A., 533.
- Phenylcinchoninic acid. See 2-Phenylquinoline-4-carboxylic acid.
- α -Phenylcinnamylacrylonitriles, bromo- (NEBER and PAESCHKE), A., 1120.
- α -Phenylcinnamic acids, 3:4'-*d*-nitro-, piperidine salts (HARRISON and WOOD), A., 580.
- β -Phenylcinnamylideneacetic acid, methyl ester (KÖHLER and BUTLER), A., 713.
- Phenylcoumaric acid hydrazidine (HOUBEN and PFANKUCH), A., 951.
- 3-Phenylcoumarin, 2-imino- and 2-oximino-, and their derivatives (HOUBEN and PFANKUCH), A., 951.
- 4-Phenylcoumarin, 6-chloro- (WITTIG, BANGERT, and RICHTER), A., 301.
- Phenylcoumarins (BARGELLINI), A., 302.
- γ -Phenylcrotonamide, α -hydroxy-, and its derivatives (BOUGAULT), A., 167, 404.
- 2-Phenyldecahydronaphthalene (GYSIN), A., 389.
- α -Phenyl- γ -dialkylaminopropyl methyl ethers (DULIERE), A., 503.
- Phenylidialacetamide (LUMIERE and PERRIN), A., 1273.
- 1-Phenyl-4:6-*di*-*p*-anisyl-2-*o*-hydroxy-*p*-anisylpyridinium salts (DILTHEY, FRÖDE, and KOENEN), A., 1234.
- 4-Phenyl-2:6-*di*-*p*-anisylpyrylium salts (DILTHEY and BERRES), A., 177.
- β -Phenyl- α -dibenzylethane, α β -*di*hydroxy- (BETZIECHE and EHRLICH), A., 1234.

- α -Phenyl- $\beta\beta$ -dibenzylethylene oxide (Tiffeneau and Lévy), A., 818.
- Phenyldibenzylethylphosphonium iodide (Meisenheimer), A., 1237.
- Phenyldiethylallylphosphonium bromide (Meisenheimer), A., 1237.
- α -Phenyl- γ -diethylaminopropyl alkyl ethers, and their hydrochlorides (Dulière), A., 503.
- Phenyldicyclohexylarsine, and its derivatives (Roberts, Turner, and Bury), A., 852.
- Phenyldicyclohexylmethyl, chloride (Gray and Marvel), A., 43.
- 9-Phenyl-9:10-dihydroanthracene, tetrachloro-, dichlorodihydroxy- and dichloronitrohydroxy-derivatives (Barnett and Matthews), A., 618.
- 10-Phenyl-9:10-dihydroanthracenone (Cook), A., 1131.
- 2-Phenyl-4:5-dihydroglyoxaline, 2-*m*-nitro-, salts of (Forsyth, Nimkar, and Pyman), A., 611.
- 1-Phenyl-3:4-dihydronaphthalene (Weiss and Woidich), A., 509.
- 3-Phenyl-1:3-dihydrophthalazine-2-acetic acid, 1-hydroxy-3-*p*-nitro-, and its salts and derivatives (Rowe, Levin, Burns, Davies, and Tepper), A., 625.
- 3-Phenyl-1:3-dihydrophthalazine-4-acetic-1-sulphonic acid, 3-*p*-nitro-, sodium salt (Rowe, Levin, Burns, Davies, and Tepper), A., 625.
- Phenyldi-2-hydroxy- α -naphthylmethane, quinonoid oxidation product of, and its derivatives (Kohn and Schwartz), A., 516.
- Phenyl-2-*op*-dihydroxyphenylpyrylium chloride, 4:6-*di-p*-hydroxy- (Dilthey, Fröde, and Koenen), A., 1254.
- Phenyl-2:8-*op*-dihydroxyphenylpyrylium chloride, 4-*p*-hydroxy- (Dilthey, Fröde, and Koenen), A., 1254.
- Phenyldi-indonylenethiazine, dianil of (Brass and Mosl), A., 839.
- 2-Phenyl-4-[3':4'-dimethoxy-6'-nitrobenzylidene]oxazolone (Merck and Oberlin), (P.), B., 852.
- Phenyl-2:4-dimethoxyphenyldiveratrocopryne (Bradley and Robinson), A., 1145.
- Phenyldimethylallylphosphonium bromide (Meisenheimer), A., 1237.
- α -Phenyl- ϵ -dimethylaminopentane- β -ol, and its salts (v. Braun and Münch), A., 1122.
- α -Phenyl- γ -dimethylaminopropyl isoamyl ether (Dulière), A., 503.
- 3-Phenyl-2:6-dimethylbenzo-1:4-pyrone (Wittig, Bangert, and Richter), A., 301.
- 1-Phenyldimethylbenzoxazoles (v. Auwers, Bundesmann, and Wiemers), A., 609.
- 10-Phenyl-1:1'-dimethyl-2:2'-carbocyanine salts (Rosenhauer, Schmidt, and Unger), A., 1260.
- 1-Phenyl-2:3-dimethyl-4-dimethylamino-5-pyrazolone, manufacture of (Farbw. vorm. Meister, Lucius, & Brüning), (P.), B., 218; (Lockemann), (P.), B., 466*.
- 1-Phenyl-2:3-dimethyl-4-ethylamino-5-pyrazolone. *N*-methylsulphite (Farbw. vorm. Meister, Lucius, & Brüning), (P.), B., 141.
- 3-Phenyl-2:5-dimethyl-1-ethylpyrazolium iodide (v. Auwers and Stuhlmann), A., 741.
- 1-Phenyl-2:3-dimethyl-4-methylamino-5-pyrazolone, *N*-methylsulphite (Farbw. vorm. Meister, Lucius, & Brüning), (P.), B., 141.
- 2-Phenyl-3:3-dimethyl-1-methylenecyclohexane. See Phenyl- γ -cyclogeraniolene.
- Phenyl-3:4-dimethyl-1:2:5-oxotriazole, 1-nitro- (Guha and De), A., 743.
- Phenyldimethylphosphine oxide, and its mercuric chloride compound (Meisenheimer), A., 1237.
- Phenyldimethylpyrazole picrates (Rojahn and Kühling), A., 624; (v. Auwers and Stuhlmann), A., 741.
- Phenyldimethylpyrazole-4-carboxylic acids (Rojahn and Kühling), A., 624.
- 1-Phenyl-2:3-dimethyl-5-pyrazolone, preparation of (Herbst), (P.), B., 108.
- 1-Phenyl-2:3-dimethyl-5-pyrazolone-4-carbithionic acid, and its ethyl ester (Chem. Fabr. vorm. Schering), (P.), B., 141.
- 1-Phenyl-2:3-dimethyl-5-pyrazolonyliminopyrine derivatives (Knoll & Co. and Boie), (P.), B., 465.
- 1-Phenyl-2:5-dimethylpyrrole, 3:4-dibenzoquinone derivative of (Pieroni and Veremeenco), A., 1157.
- 1-Phenyl-4:5-dimethyl-1:2:3-triazole, and its picrate (Rojahn and Trielov), A., 79.
- 3-Phenylspirodi-2:2'- β -naphthapyran (Löwenstein and Katz), A., 956.
- N*-Phenyldinaphthoxazines, and their hydrochlorides (Goldstein and Radavanovitch), A., 1169.
- Phenyl-4:6-diphenylpyrylium perchlorate, 2-*o*-hydroxy- (Dilthey, Fröde, and Koenen), A., 1254.
- m*-Phenylene dibutyrate and dihexoate (Klarmann), A., 1135.
- Phenylene-1-acetic-2-propionic acid, catalytic reduction of, with platinum oxide-platinum black (Hiers and Adams), A., 402.
- p*-Phenylenearsinic acid, and its hydrate (Schmidt and Hoffmann), A., 533.
- 1:1'-(*p*-Phenylene)-bisbenzthiazole (Bogert and Stull), A., 310.
- m*-Phenylenchloroarsine (Schmidt and Hoffmann), A., 533.
- m*- and *p*-Phenylenediacetonitriles, reduction of (Tittley), A., 512.
- p*-Phenylenediamine, catalytic oxidation of α -naphthol and (Wertheimer), A., 582.
- compound of benzoic acid and (Pushin and Vilovitsch), A., 245.
- m*-Phenylenediamine- β -phenylpyridophthalein (Tewari and Dutt), A., 1154.
- m*-Phenylenedisulphonacetic acid, 4:6-dinitro- (Finzi and Pagliari), A., 310.
- m*-Phenylenedisulphoxyacetic acid, 4-nitro- (Finzi and Pagliari), A., 310.
- 1:3-Phenylenedi- β -thiolpropionic acid, and 4-amino-, and its hydrochloride, 4:6-dibromo-, and 4-nitro- (Finzi), A., 1255.
- α -Phenylenoxamazide (Guha and De), A., 743.
- α -Phenylenesemimalonamazide (Guha and De), A., 743.
- α -Phenylenethiocarbamide, sodium derivative of (Stephen and Wilson), A., 1262.
- α -Phenylenethiocarbohydrazide, and its disulphide (Guha and De), A., 743.
- 2:4-Phenylenedithioglycollic acid, thiazine derivatives of (Finzi and Pagliari), A., 309.
- α -Phenylenedithioglycollic acid, 4-bromo- (Guha and Chakladar), A., 398.
- m*-Phenylenedithiolacetic acid, 4-nitro-, phenyl ester (Finzi and Pagliari), A., 310.
- α -Phenylethane, $\alpha\beta$ -dithiocyano- (Kaufmann and Oehring), A., 393.
- Phenyl β -ethoxystyryl ketone (Dufraisse and Chaux), A., 617.
- isomeric forms of (Weygand and Hennig), A., 1248.
- Phenylethyl alcohol, manufacture of (Harlow, Britton, and Dow Chemical Co.), (P.), B., 898.
- naphthylurethane from (Bickel and French), A., 517.
- α - and β -Phenylethyl ethers (Sanderens), A., 517.
- β -Phenylethyl *p*-nitrobenzoate (Kirner), A., 611.
- d*-Phenylethylallylamino *N*-oxide, salts of (Meisenheimer, Glawe, Greeske, Schorning, and Vieweg), A., 1240.
- Phenylethylamine, *p*-hydroxy-. See Tyramine.
- β -Phenylethyl- ϵ -aminoamylamine, and its salts and dibenzoyl derivative (v. Braun, Goll, and Metz), A., 1233.
- cis*- and *trans*-2-(β -Phenylethylamino)-1-benzylcyclohexanes, and their derivatives (Schoff and Boettcher), A., 744.
- 2- α - and β -Phenylethylamino-1:6:8-trinitronaphthalenes (van der Kam), A., 1240.
- α -Phenylethylaniline, 2:4-dinitro- (van der Kam), A., 1240.
- Phenylethylbarbituric acid, compound of 4-dimethylamino-1-phenyl-2:3-dimethyl-5-pyrazolone and (Pfeiffer), (P.), B., 172; (Chem. Fabr. vorm. Schering), (P.), B., 515*.
- compound of mercuric oxide and (Fleury), A., 305.
- Phenylethyl- ϵ -benzamidoamylamine, and its β -hydrochloride (v. Braun, Goll, and Metz), A., 1233.
- β -Phenylethyl-*p*-bromobenzenesulphonamide (Carothers and Jones), A., 162.
- Phenylethylcarbinol, naphthylurethane from (Bickel and French), A., 517.
- 1-Phenyl-4-ethylidihydrouracil (Anziegin, Gulewitsch, and Nordheim), A., 1111.
- [β -Phenylethyl]dimethylphosphine oxide, and its mercuric chloride compound (Meisenheimer), A., 1237.
- 6-Phenyl-1-ethyl-3:5-di-*p*-tolyl-2:4-diketohexahydro-1:3:5-triazine (Lange), A., 1158.
- β -Phenylethylglyoxylic acid, $\alpha\beta$ -dibromo-, methyl ester (Reimer), A., 1139.
- α -Phenylethylhydrazine, and its derivatives (Schulze and Lochte), A., 608.
- 3-Phenyl- α -ethylidenamino-2:4-diketotetrahydrothiazole-2-phenyl- α -ethylidenethiazine (Stephen and Wilson), A., 1262.
- Phenylethylketazine (Macurevitsch), A., 824.
- cis*- and *trans*-2-(β -Phenylethylmethylamino)-1-benzylcyclohexanes, and their derivatives (Schoff and Boettcher), A., 744.
- β -Phenylethyl methyl ketone, β -hydroxy-, and its hydrazones (Kubota and Hayashi), A., 520, 1041.

- α -Phenyl- γ -ethyl-4-penten- α -ones, and their derivatives (FARROW and KON), A., 1040.
- β -Phenylethylphthalimide (ING and MANSKE), A., 1132.
- dl*-Phenylethylpropylamine *N*-oxide, salts of (MEISENHEIMER, GLAWE, GRESKE, SCHORNING, and VIEWEG), A., 1240.
- dl*-Phenylethylpropylphosphino oxide (MEISENHEIMER), A., 1237.
- β -Phenylethylxanthyl perchlorate (CONANT, SMALL, and SLOAN), A., 842.
- 9-Phenylfluorenyl alcohol, hydrogenation of (IPATIEV and DOLGOF), A., 949.
- Phenyl- γ -cyclogeraniolene (ESCOURROU), A., 1238.
- α -Phenylglutaric acid, 4:6-dibromo-2:3-imino-, 2:3-imino-, 4-iodo-2:3-imino-, and 4:6-diiodo-2:3-imino- (KENDALL, OSTERBERG, and MACKENZIE), A., 735.
- Phenylglycine, hydroxy-, derivatives of (SHIMO), A., 1243.
- Phenylglycineanilide, and its derivatives (MOTYLEVSKI), A., 829.
- Phenylglycinebromoanilide, bromo- (MOTYLEVSKI), A., 829.
- Phenylglycine-*p*-toluidide (MOTYLEVSKI), A., 829.
- Phenylglyoxal, action of *Bacterium ascendens* on (MAYER), A., 1062.
- conversion of, into mandelic acid by ketone-aldehyde mutase (BINDER-KOTRBA), A., 1059.
- 2-Phenylglyoxaline, bromo- and bromonitro-derivatives, and their salts (FORSYTH, NIMKAR, and PYMAN), A., 612.
- Phenylglyoxalines, amino-, and their salts (BALABAN and KING), A., 187.
- 2-Phenylglyoxaline-1-acetic acid, 5-chloro-, ethyl ester, and amides (GRÄNACHER, SCHELLING, and SCHLATTER), A., 78.
- β -Phenylglyoxime, and its peroxide (PONZIO), A., 295.
- Phenylglyoxime, hydroxy-, action of phosphorus pentachloride on (GASTALDI, LONGIARE, and SIRCANA), A., 1247.
- salts and derivatives of (PONZIO), A., 850.
- Phenylglyoxylanilide, and its oxime (BORSCHKE and FRITZSCHE), A., 393.
- Phenylglyoxylic acid, fermentation of (BINDER-KOTRBA), A., 1061.
- α -Phenylcyclohexanol, and its derivatives (BEDOS), A., 508.
- β -Phenyl- Δ^8 -hexenoic acid, and its derivatives (JOHNSON and KON), A., 1246.
- δ -Phenylhexen- β -ones, and their derivatives (JOHNSON and KON), A., 1246.
- β -Phenylhexoic acid, fate of, in the body (STEWART), A., 199.
- Phenylhydrazine, oxidation of, and formation of hydrazones (ARDAGH and WILLIAMS), A., 162.
- action of, on ethyl benzylideneacetate (v. AUWERS and MAUSS), A., 624.
- action of, on fats and fatty acids (VAN ALPHEN), A., 46.
- Phenylhydrazine, *o*-amino-, condensations of (GUHA and DE), A., 743.
- bromo- and iodo-derivatives, and their aldehyde and ketone compounds (VOTOČEK, ETEK, and KOPPOVA), A., 501.
- dichloronitro-, and their derivatives (MÜLLER and HOFFMANN), A., 163.
- p*-nitro-, preparation of, and its use in gravimetric analysis (HODGSON and BEARD), A., 394.
- 2:4-dinitro-, compounds of, with aldehydes and ketones (BRADY and ELSMIE), A., 394.
- Phenyl *p*-hydroxybenzyl ketone, 2:4:6-trihydroxy- (BAKER and ROBINSON), A., 1253.
- β -Phenylhydroxylamine, condensation of acetone with (BANFIELD and KENYON), A., 828.
- Phenylhydroxylamine, *p*-bromo-, preparation of (HAWORTH and LARWORTH), A., 161.
- 6-bromo-2:4-dinitro-, and its dibenzoyl derivative (BORSCHKE and FESKE), A., 605.
- 3:4-dichloro- (KRAAY), A., 1034.
- 4-Phenyl-6-*o*-hydroxyphenyl-2-*o*-hydroxy-*p*-tolylpyridine, and its picrate (DILTHEY, FRÖDE, and KOENEN), A., 1254.
- 4-Phenyl-6-*o*-hydroxyphenyl-2-*o*-hydroxy-*p*-tolylpyrylium salts and derivatives (DILTHEY, FRÖDE, and KOENEN), A., 1254.
- 2-Phenyl-4- β -dihydroxyisopropylquinoline, and its salts (JOHN and FISCHL), A., 622.
- N*-Phenyliminoisocarboxystyryl-3-carboxylic acid, *N*-*p*-nitro- (ROWE, LEVIN, BURNS, DAVIES, and TEPPER), A., 626.
- 4-Phenylimino-2-phenyl-3:6(1:6)-dimethyl-3:4(1:4)-dihydropyrimidine (FORSYTH and PYMAN), A., 1156.
- Phenylindanylamines, *m*- and *p*-nitro-, and their hydrochlorides (COURTOT and DONDELINGER), A., 59.
- 2-Phenylindazole, and its derivatives, and 3-cyano- (REISSELT and LEMMER), A., 528.
- β -Phenyl- β -2-ketocyclohexylpropionic acid, and its derivatives (VORLÄNDER and KUNZE), A., 1144.
- β -Phenyl-lactic acids, configuration of (CLOUGH), A., 111.
- Phenylmalonic acid, chlorodinitro-, and 3:5-dichloro-2:4-dinitro-, methyl esters (BORSCHKE and TRAUTNER), A., 390.
- Phenylmercuric amine (CHAMBERS and SCHERER), A., 630.
- Phenylmercurithioglycolic acid (KHARASCH), (P.), B., 899.
- Phenylmesitylbenzylarsonium bromide (HUNT and TURNER), A., 186.
- Phenylmesityldimethylarsonium iodide (HUNT and TURNER), A., 186.
- Phenylmesitylmethylarsine (HUNT and TURNER), A., 186.
- Phenylmetazonic acid, and its nickel salt (PONZIO), A., 1159.
- Phenyl *p*-methoxybenzyl ketone, trihydroxy- (BAKER and ROBINSON), A., 1253.
- 1-Phenyl-5-*p*-methoxyphenylpyrazole (BENARY, MEYER, and CHARISIUS), A., 273.
- Phenyl methoxystyryl ketones, polymerides of, and their derivatives (STOBBE and HENSEL), A., 1248.
- α -Phenyl-*o*-methoxystyryl methyl ketone (DICKINSON), A., 1144.
- Phenylmethylallylamine *N*-oxides, salts of (MEISENHEIMER, GLAWE, GRESKE, SCHORNING, and VIEWEG), A., 1240.
- α -Phenylmethylamino- β -acetylacrylic acid, ethyl ester (KÜSTER and ERFLE), A., 713.
- 1-Phenyl-5-methyl-4-aminomethyl-1:2:3-triazole, and its salts (ROJAHN and TRIELOV), A., 79.
- 10-Phenyl-9-methylanthracene (BARNETT and MATTHEWS), A., 1030.
- 2-Phenyl-2-methyl-1:3-benzodithiole (HURTLEY and SMILES), A., 948.
- 3-Phenyl-2-methylbenzo-1:4-pyrone, 6-chloro- (WITTIG, BANGERT, and RICHTER), A., 301.
- 2-Phenyl-3-methylbenzopyrylium perchlorate (LÖWENSTEIN and KATZ), A., 956.
- 4-Phenyl-2-methylbenzopyrylium hydrochloride, 6:7-dihydroxy- (KEHRMANN and RIEDER), A., 732.
- 2-Phenyl-5-methylbenzothiazole, 2-*p*-amino- and 2-*p*-nitro- (BOGERT and ALLEN), A., 744.
- Phenylmethylbenzylcarbamides (CAROTHERS and JONES), A., 162.
- Phenylmethyl benzyl ketone, α -hydroxy-, and its semicarbazone (TIFFENEAU and LEVY), A., 71.
- Phenylmethyl butyl ketones, α -hydroxy-, and their derivatives (TIFFENEAU and LEVY), A., 71.
- Phenylmethylcarbinol, naphthylurethane from (BICKEL and FRENCH), A., 517.
- 3-Phenyl-4-methylcoumarin, 6-chloro- (WITTIG, BANGERT, and RICHTER), A., 301.
- hydroxy-, acetyl, and benzoyl derivatives of (BARGELLINI), A., 302.
- N'*-Phenyl-*N*-methyl-*N*- α -cyanoisopropylcarbamido (BILTZ and SLOTTA), A., 1046.
- Phenylmethyldibenzylphosphonium salts (MEISENHEIMER), A., 1237.
- 2-Phenyl-1-methyl-1:4-dihydroquinoline picrate (MEISENHEIMER, STOTZ, and BAUER), A., 77.
- Phenylmethyl ethyl ketone, α -hydroxy-. See Phenylpropionylcarbinol.
- l*-Phenylmethylethylphosphonium *l*-bromocamphorsulphonate, hydroxy- (MEISENHEIMER), A., 1237.
- Phenylmethyl-1-ethylpyrazoles, and their picrates (v. AUWERS and STUHLMANN), A., 741.
- N*-Phenylmethylglycine, *p*-hydroxy- (MERCK and DÜTZMANN), (P.), B., 434.
- 1-Phenyl-2-methylglyoxaline, 5-chloro-, and its picrate (GRÄNACHER, SCHELLING, and SCHLATTER), A., 78.
- 2-Phenyl-1-methylglyoxaline, and 2-*p*-nitro-, and their salts and derivatives (BALABAN and KING), A., 187.
- ζ -Phenyl- β -methyl- Δ^8 -heptadiene (ESCOURROU), A., 1120.
- ζ -Phenyl- β -methyl- Δ^8 -hepten- ζ -ol (ESCOURROU), A., 1023.
- 3-Phenyl-1-methyl- Δ^8 -cyclohexen-5-one, semicarbazones of (MACUREVITSCH), A., 621.
- 5-Phenyl-3-methyl- Δ^2 -cyclohexenone (MACUREVITSCH), A., 170.
- 1-Phenyl-3-methylhydantoin (BILTZ and SLOTTA), A., 1046.
- Phenylmethyliodoarsine, *p*-bromo- (HUNT and TURNER), A., 186.
- 3-Phenyl-4-methyl- α - β -naphthacoumarin (BARGELLINI), A., 303.

- Phenylmethylnitroamine, 2:4:6-trinitro- (*teeryl*), determination of, in explosives (LEHMSTEDT), B., 388.
- Phenylmethylisooxazoles, and their derivatives (CLAISEN), A., 406.
- α -Phenyl- β -methyl- Δ^8 -pentadiene, α -2-hydroxy-3:5-dichloro- (CLAISEN and TIETZE), A., 1035.
- β -Phenyl- γ -methyl- Δ^8 -pentenoic acid, and its derivatives (JOHNSON and KON), A., 1246.
- β -Phenyl- β -methylpropane, α - γ -dibromo-, α -bromo- γ -hydroxy-, and its acetyl derivative, and α -chloro- γ -hydroxy- (MILLS and BAINS), A., 44.
- β -Phenyl- β -methylpropane- α -diol, and its diacetate (MILLS and BAINS), A., 44.
- α -Phenyl- β -methylpropan- α -one, and its semicarbazone (FAVORSKY and TCHILINGAREN), A., 272.
- d - α -Phenyl- β -methylpropyl mercaptan (LEVENE and MIKESKA), A., 1226.
- dl -Phenylmethylpropylamine N -oxide, salts of (MEISENHEIMER, CLAWE, GRESKE, SCHORNING, and VIEWEG), A., 1240.
- Phenylmethyl propyl ketones, α -hydroxy-. See Phenylbutyrylcarbinols.
- dl -Phenylmethylpropylphosphine oxide (MEISENHEIMER), A., 1237.
- 5(3)-Phenyl-3(5)-methylpyrazolecarboxylic acid, ethyl and methyl esters and derivatives (v. AUWERS and STUHLMANN), A., 741.
- Phenylmethylpyrazolone metho- p -toluenesulphonate (RODIONOV), A., 533.
- Phenylmethylpyrazolone, nitroso-, ferrous salt (KÜSTER, ERFLE, v. ROLL, and SCHILLER), A., 821.
- 1-Phenyl-5-methyl-3-pyrazolone-4-carbithionic acid, ethyl ester (CHEM. FABR. FORM. SCHERING), (P.), B., 141.
- 6-Phenyl-2-methylpyridine-4-carboxylamide-3-carboxylic acid, and its imide (MUMM and NEUMANN), A., 958.
- 6-Phenyl-2-methylpyridinecarboxylic acids, and their ethyl esters (MUMM and NEUMANN), A., 958.
- 6-Phenyl-2-methylpyridine-3:4-dicarboxylic acid, potassium salt and anhydride (MUMM and NEUMANN), A., 958.
- 5(3)-Phenyl-3(5)-methylpyrrole, and 4-chloro-, and their derivatives (v. AUWERS and STUHLMANN), A., 741.
- 2-Phenyl-1-methylquinoline picrate (MEISENHEIMER, STOTZ, and BAUER), A., 77.
- Phenyl p -methylstyryl ketone dipicrate (WEYGAND and MATTHES), A., 1041.
- Phenylmethylsulphone, p -amino-, acetyl derivative (CHILD and SMILES), A., 1243.
- 1-Phenyl-5-methyl-1:2:3-triazole, 4-cyano- (ROJAHN and TRIELOV), A., 79.
- 5-Phenyl-2-methyl-1:2:4-triazole, 3-hydroxy-5- p -nitro- (BACKER and MULDER), A., 182.
- 1-Phenyl-5-methyl-1:2:3-triazole-4-aldehyde, and its derivatives (ROJAHN and TRIELOV), A., 78.
- 1-Phenyl-5-methyl-1:2:3-triazole-4-carboxylic acid, anhydride and chloride (ROJAHN and TRIELOV), A., 78, 79.
- N -Phenylnaphthalamic acid, o -amino-, and its silver salt (BISTRZYCKI and RISI), A., 67.
- 1-Phenylnaphthalene, and *mono*- and *di*-amino-, and their derivatives (WEISS and WOLDICH), A., 509.
- 1-Phenylnaphthalene-2:3-dicarboxylic acid, 4-bromo- (GEORGEACOPOL), A., 840.
- 2-Phenyl- α - β -naphthatriazole, 4:5-dihydroxy-. See 2-Phenyl- α - β -naphthatriazolequinol.
- 2-Phenyl- α - β -naphthatriazolequinol, and its derivatives (CHARRIER, MANFREDI, and GORINI), A., 848.
- 2-Phenyl- α - β -naphthatriazolequinone, and its derivatives (CHARRIER, MANFREDI, and GORINI), A., 848.
- 3-Phenyl- α - β -naphthatriazolequinone, and its derivatives (CHARRIER, BERETTA, and GISELLA), A., 848.
- Phenyl- α -naphthylacetone (McKENZIE and TATTERSALL), A., 65.
- Phenyl- α -naphthylacetone (McKENZIE and TATTERSALL), A., 65.
- Phenyl- β -naphthylacetylene (RUGGLI and REINERT), A., 392.
- α -Phenyl- β -1-naphthylethane, β , β -dichloro- (RUGGLI and REINERT), A., 391.
- α -Phenyl- β -naphthylethylenes, β -chloro- (RUGGLI and REINERT), A., 391.
- α -Phenyl- α -naphthylglycollic acid, conversion of, into ketones (McKENZIE and TATTERSALL), A., 65.
- Phenyl- α - and - β -naphthylglyoxals (RUGGLI and REINERT), A., 391.
- 2-Phenyl-3- α -naphthylindone (WEISS and SAUERMAN), A., 294.
- Phenyl- α -naphthylmethyl p -tolyl ketone (McKENZIE and TATTERSALL), A., 65.
- Phenyl- α - and - β -naphthylquinoxalines (RUGGLI and REINERT), A., 391.
- Phenylnitroaminoethyl nitrate, trinitro- (MORAN and DU PONT DE NEMOURS & Co.), (P.), B., 78.
- Phenyl nitrobenzyl ketones, nitro- (HARRISON and WOOD), A., 605.
- α -Phenyl- β -2:4-dinitro-1-naphthylethylene (PASTAK), A., 392.
- δ -Phenyl- α - p -nitrophenyl- Δ - γ -butadiene, nitro- α -cyano- (NEBER and PAESCHKE), A., 1120.
- Phenylnitrophenyldiveratrocopyrines, and their hydrochlorides (BRADLEY and ROBINSON), A., 1145.
- α -Phenyl- β -dinitro- m -tolyl- α -methylhydrazines, crystal structure of (RESEGGOTTI), A., 1195.
- β -Phenylnonane- β - γ -diol (NICOLLE), A., 383.
- α -Phenyl-octan- α -on- β -ol (NICOLLE), A., 383.
- 5-Phenyl-1:2:4-oxadiazole, 3-hydroxy-, copper salt of (PONZIO), A., 1159.
- Phenylcyclopentane (ZELINSKI and TITZ), A., 278.
- α -Phenylpentane- δ -diol (v. BRAUN and MÜNCH), A., 1122.
- Phenylcyclopentanol (ZELINSKI and TITZ), A., 278.
- β -Phenyl- Δ^8 -pentenoic acid, and its derivatives (JOHNSON and KON), A., 1246.
- δ -Phenyl- Δ - γ -penten- β -one, and its semicarbazone (JOHNSON and KON), A., 1246.
- Phenylpentinonitrile (GRIGNARD and PERRICHON), A., 382.
- 2-Phenyl-3-phenetolesulphonylquinolines, and their derivatives (TRÖGER and DIMITROV), A., 78.
- Phenyl- p -phenetylacetamidide (SEN and RAY), A., 606.
- Phenyl- $[\beta$ -phenylethyl]dimethylphosphonium bromide (MEISENHEIMER), A., 1237.
- Phenyl β -phenylethyl ketone, 2:4-*di*- and 2:4:6-*tri*-hydroxy- (KLARMANN), A., 1135.
- Phenyl- β -phenylethylmethylarsine, and its methiodide (ROBERTS, TURNER, and BURY), A., 852.
- Phenylphosphoric acid, and bromo- and chloro-derivatives, metallic salts of (ZETZSCHE and NACHMANN), A., 1242.
- salts, hydrolysis of, by phosphatase (IWATSURU), A., 867.
- Phenylphosphoric acid, p -bromo-, and its ferric salt (ZETZSCHE and NACHMANN), A., 705.
- Phenylcyclophosphoric acid, tetrabromopyrocatechol ester (ZETZSCHE and AESCHLIMANN), A., 1225.
- 3-Phenylphthalaz-4-one, 4-amino-, and its derivatives (ROWE, LEVIN, BURNS, DAVIES, and TEPPER), A., 625.
- α -Phenylphthalide- α -carboxylic acid, ethyl ester (CORNILLOT), A., 168.
- N -Phenylphthalimidine, and 4-amino-, and 4-hydroxy-, and their derivatives (ROWE, LEVIN, BURNS, DAVIES, and TEPPER), A., 625.
- Phenylpiperonyldiveratrocopyrine (BRADLEY and ROBINSON), A., 1146.
- dl - α -Phenylpropane, α -amino-, d -tartrate of (BILLON), A., 405.
- β -Phenylpropane, α - γ -dibromo- (MILLS and BAINS), A., 44.
- l - α -Phenylpropanesulphonic acid (LEVENE and MIKESKA), A., 1226.
- 2-Phenyl-4- Δ -propenylquinoline, and its salts (JOHN and FISCHL), A., 622.
- γ -Phenylpropine, α -bromo- and α -iodo- (GRIGNARD and PERRICHON), A., 382.
- Phenylpropionic acid, and its ethyl ester, reactions of, with nitroso-compounds (ALESSANDRI), A., 287.
- cholesteryl ester (SOC. CHEM. IND. IN BASLE), (P.), B., 141.
- ethyl ester, dinitrones from p -nitrosomethylaniline and p -nitrosodimethylaniline and (ALESSANDRI), A., 1038.
- azide and hydrazide of, and its derivatives (CURTIUS and KENNGOTT), A., 724.
- Phenylpropiondiethylamide (MAXIM), A., 837.
- β -Phenylpropionic acid, thallose salt (WALTER), A., 712.
- β -Phenylpropionic acid, β -amino-, ethyl ester, and its salts (HOUBEN and PFANKUCH), A., 951.
- bromoamino-derivatives, ethyl esters, and their derivatives (UNDERWOOD and KOCHMANN), A., 287.
- o -cyano- (EDWARDS), A., 835.
- o -hydroxy-, nitrile and acetyl derivative and their derivatives (HOUBEN and PFANKUCH), A., 951.
- Phenylpropionyl peroxide (BÖESEKEN and GELISSEN), A., 166.
- Phenylpropionylcarbinol, and its derivatives (TIFFENEAU and LEVY), A., 71.
- Phenyl-4-isopropoxyphenyldiveratrocopyrine, and its hydrochloride (BRADLEY and ROBINSON), A., 1145.

- d*- and *l*-Phenylpropyl mercaptans (LEVENE and MIKESKA), A., 1226.
- γ -Phenylpropyl *p*-nitrobenzoate (KIRNER), A., 611.
- γ -Phenylpropyldimethylthylarsonium iodide (ROBERTS, TURNER, and BURY), A., 852.
- γ -Phenyl-*n*-propylethylene oxide (v. BRAUN and MÜNCH), A., 1122.
- N* γ -Phenylpropyl-*p*-phenetidine (RIEDEL), (P.), B., 771.
- α -Phenyl- α -*n*-propyl-*n*-valeramide (LUMIERE and PERRIN), A., 1273.
- γ -Phenylpropylxanthyl perchlorate (CONANT, SMALL, and SLOAN), A., 842.
- β -Phenylpyridinedicarboxylic acid, dyes from (TEWARI and DUTT), A., 1153.
- Phenyl-4-pyridylpyruvic acid, and its ethyl ester and oximo hydrochloride (SINGH), A., 65.
- 2-Phenylpyriminazole, and its salts (SCHMID and BANGLER), A., 848.
- and its derivatives (TSCHITSCHIBABIN), A., 1153.
- 2-Phenylpyrrole, from bromobenzene and potassium pyrrole (PLANCHER and GHIGI), A., 178.
- 2-Phenylquinoline, 4-amino-, and its salts and derivatives (JOHN, GROSSMANN, and FISCHL), A., 959.
- 2-Phenylquinoline-4-carboxylic acid, derivatives of (JOHN, GROSSMANN, and FISCHL), A., 958.
- and its hydriodide, mixture of, as analgesic (LILLY and LILLY & Co.), (P.), B., 172.
- chloride, derivatives of (ROJAHN and SCHULTEN), A., 842.
- 2-Phenylquinoline-4-carboxylic acid, 6-nitro-, and its potassium salt (CALVERY, NOLLER, and ADAMS), A., 187.
- β -2-Phenyl-4-quinolylacrylic acid, and its salts and methyl ester (JOHN and GROSSMANN), A., 179.
- 2-Phenyl-4-quinolylcarbamide (JOHN, GROSSMANN, and FISCHL), A., 958.
- β -2-Phenyl-4-quinolylethylamine, and its salts (JOHN and GROSSMANN), A., 179.
- β -2-Phenyl-4-quinolylethylurethane (JOHN and GROSSMANN), A., 179.
- derivatives of (JOHN, GROSSMANN, and FISCHL), A., 958.
- α -2-Phenyl-4-quinolylpropan- β -ol, $\gamma\gamma\gamma$ -trichloro- (JOHN and GROSSMANN), A., 179.
- β -2-Phenyl-4-quinolylpropion-azide and -hydrazide (JOHN and GROSSMANN), A., 179.
- 2-Phenyl-4-quinolylpropionic acid, β -6-hydroxy-, and its salts (JOHN and GROSSMANN), A., 180.
- N*-Phenylquinrhodine (GRÄNACHER, OFNER, and KLOPFENSTEIN), A., 81.
- Phenylrosinduline, synthesis of (LANTZ and WAHL), A., 530; (WAHL and LANTZ), B., 942.
- 4-Phenylsemicarbazide, 4-*m*-nitro-, and its derivatives (WHEELER and WALKER), A., 62.
- Phenylserine, action of acids and alkalis on (BETZIECHE), A., 155.
- dl*-Phenylserine, acyl and halogenacyl derivatives (ABDERHALDEN and BUADZE), A., 544.
- Phenylserines, isomeric, and their derivatives (FORSTER and RAO), A., 1037.
- Phenyl styryl ketones, isomeric (WEYGAND and MATTHES; WEYGAND and HENNIG), A., 1248.
- Phenyl styryl ketones, amino-, halochromy of acyl derivatives of (DILTHEY and BERNES), A., 727.
- 3-Phenyl-2-styryl-6-methylbenzo-1:4-pyrone (WITTIG, BANGERT, and RICHTER), A., 301.
- 3-Phenyl-2-styryl- β -naphthylpyrylium perchlorate, 2-*o*-hydroxy- (DILTHEY, BERNES, HÖLTERHOFF, and WÜCKEN), A., 1255.
- 2-Phenyl-4-styrylquinoline, and its salts (JOHN and FISCHL), A., 622.
- Phenylsuccinic acid, fate of, in the body (CLUTTERBUCK and RAPER), A., 199.
- 3-Phenyltetrahydrophthalazine-4-acetic acid, 1-hydroxy-3-*p*-amino-, and its acetyl derivative (ROWE, LEVIN, BURNS, DAVIES, and TEPPER), A., 625.
- 2-Phenyl-1:2:3:4-tetrahydroquinoline, 1-benzoyl derivative (MEISENHEIMER, STOTZ, and BAUER), A., 77.
- Phenylthiocarbamide, formation of, from thiocarbamilide (NAUNTON), A., 279.
- α -Phenylthiolphenylarsenious oxide (ROBERTS and TURNER), A., 852.
- α -Phenylthiolphenylarsinic acid (ROBERTS and TURNER), A., 852.
- α -Phenylthiolphenyldichloroarsine (ROBERTS and TURNER), A., 852.
- m*-Phenylthiolphenylthioglycollic acid, 2:4-dinitro- (FINZI and PAGLIARI), A., 948.
- Phenylthionacetic acid, ethyl ester (SAKURADA), A., 950.
- Phenyl- β -thiosemicarbazide, 2:4-*di*- and 2:4:6-*tri*-nitro- (GIUA and PETRONIO), A., 62.
- Phenyltolylacetamidines, and their derivatives (SEN and RÂÏ), A., 606.
- 2-Phenyl-6-*p*-tolyl-2:3-dihydrotetrazine (PONZIO and PEROLIO), A., 308.
- Phenyl-*p*-tolylidimethylarsonium iodide (HUNT and TURNER), A., 186.
- 2-Phenyl-3-*o*-tolylindone (WEISS and SAUERMAN), A., 294.
- Phenyl-*p*-tolylmethylarsine (HUNT and TURNER), A., 186.
- 1-Phenyl-5-*p*-tolylpyrazole (BENARY, MEYER, and CHARISIUS), A., 273.
- p*-Phenyl-*p*-tolylsulphone, amino-, acetyl derivative (HARRISON, KENYON, and PHILLIPS), A., 1031.
- 2-Phenyl-6-*p*-tolyl-2:3:4:5-tetrahydrotetrazine (PONZIO and PEROLIO), A., 308.
- 1-Phenyl-3-*p*-tolyl-1:2:4-triazole, 5-hydroxy-, and its acetyl derivative (GASTALDI and PRINCIVALLE), A., 1261.
- 5-Phenyl-4-*p*-tolyl-1:2:4-triazole, 3-thio-, and its derivatives (FROMM), A., 717.
- 1-Phenyltriazan-2:3-dicarboxylic acid, ethyl ester, reversible formation of (COOPER and INGOLD), A., 1028.
- 3-Phenyl-1:2:4-triazole, 5-thiol-, and its derivatives (FROMM), A., 717.
- 1-Phenyl-1:2:3-triazole-4-carboxylic acid, 5-chloro-, and its derivatives (ROJAHN and TRIELOV), A., 79.
- 2-*N*-Phenyl-3:4-triazolenaphthalic acid (CHARRIER and BERETTA), A., 307.
- Phenyltriethylphosphonium bromide (MEISENHEIMER), A., 1237.
- Phenyl-3:4:5-trimethoxyphenyldiveratrocopyrine, and its salts (BRADLEY and MARTIN), A., 1145.
- 4-Phenyl-1:2:6-trimethyl-1:4-dihydropyridine-3:5-dicarboxylic acid, ethyl ester (MUMM and LUDWIG), A., 961.
- 3-Phenyl-1:5:5-trimethylhydantoin (BILTZ and SLOTTA), A., 1046.
- 1-Phenyl-1:2:2-trimethylcyclopentane, 3-cyano- (SALMON-LEGAGNEUR), A., 613.
- Phenylurethane, *p*-bromo-, and *p*-iodo- (BASTERFIELD, WOODS, and WRIGHT), A., 1132.
- δ -Phenyl-*n*-valeric acid, α -bromo-, ethyl ester (v. BRAUN and MÜNCH), A., 1122.
- β -Phenylvalerolactone (JOHNSON and KON), A., 1246.
- Phenylvaleryldiveratrocopyrine, and its hydrochloride (BRADLEY and ROBINSON), A., 1145.
- β -Phenyl- β -vinylpropionophenone (KÖHLER and BUTLER), A., 713.
- α - and β -Philothonies (PAILHADE), A., 969.
- Phloridzin in apple and pear tissues, and its determination (HARVEY), A., 981.
- bromination of (MISAKI), A., 501, 863.
- poisoning. See under Poisoning.
- Phloroglucinol, and its trimethyl ether, absorption spectra of (MORTON and ROGERS), A., 9.
- triphenyl ether, dinitro- (BORSCHKE and TRAUTNER), A., 390.
- Phloroglucinol, dinitro-, tridinitrophenyl ether (BORSCHKE and FESKE), A., 606.
- Phloroglucinol- β -phenylpyridophthalein (TEWARI and DUTT), A., 1154.
- Phloro-*n*-hexophenone (KLARMANN and FIGDOR), A., 516.
- isoPhorone, reactions of, and bromo- (BAKER), A., 520.
- Phosgeno-aluminates. See Chloroaluminates under Aluminium.
- Phosphatase, hydrolysis of phosphoric esters by (NEUBERO and WAGNER), A., 757; (IWATSURU), A., 867.
- of kidneys (KAY), A., 977.
- Phosphates. See under Phosphorus.
- Phosphate deposits, origin of (GRAHAM), A., 1119.
- Phosphate rock, treatment of (BLUMENBERG and STOCKHOLDERS' SYND.), (P.), B., 717.
- Phosphatides, purification of (BOLLMANN), (P.), B., 993.
- of plants (LEVENE and ROLF), A., 982.
- synthesis and destruction of, in the organism (KOIZUMI), A., 540.
- distribution of, in pregnancy (BAUMANN and HOLLY), A., 429.
- variations of, during liver autolysis (ARTOM), A., 201.
- Phosphatide bases, salts of (GRÜN and LIMPÄCHER), A., 826.
- Phosphine. See Phosphorus trihydride.
- Phosphinic acids, formation of, from triarylmethoxyphosphorus dichlorides (BOYD and SMITH), A., 1161.
- γ -Phosphino-*n*-butyric acid, and its salts and derivatives (NYLÉN), A., 826.
- β -Phosphinopropionic acid, and its salts and derivatives (NYLÉN), A., 826.

- Phosphites. See under Phosphorus.
- Phospholipins, determination of, colorimetrically, in seeds (GUERANT), A., 1184.
- Phosphomolybdic acid reagent, preparation of (FONTÈS and THIVOLLE), A., 1282.
- Phosphors (TRAVNÍČEK), A., 455.
- light from excitation of, by cathode rays (KORDATZKI, SCHLEEDER, and SCHROETER), A., 777.
- magnetic properties of (RUPP), A., 114.
- alkaline-earth sulphur, colour of crushed (STALONY-DOBRAŃSKI), A., 1080.
- silicon disulphide (TIEDE and THIMANN), A., 1081.
- Phosphor-bronze (GLASER and SEEMANN), B., 411.
- Phosphorescence (DHAR), A., 992.
- relation between fluorescence and (VAVILOV and LEVSHIN), A., 335.
- excitation of, by cathode rays (STADLER), A., 993.
- of metallic sulphides (GUNTZ), A., 885.
- polarised and unpolarised, of solid solutions of dyes (PRINGSHEIM and VAVILOV), A., 885.
- Phosphorescent masses (MINES), (P.), B., 248.
- Phosphoric acid. See under Phosphorus.
- Phosphorite, concentration of (VERCHOVSKI), B., 416.
- reciprocal action of soils and (LEBEDINTSEV), B., 169.
- decomposing action of peat on (PRIANISNIKOV), B., 335.
- izum calcareous, fertilising value of (EGOROV), B., 763.
- powdered, manurial experiments with (KALININ), B., 416.
- Phosphorous acid. See under Phosphorus.
- Phosphorus, production of, in the electric furnace (THARALDSEN), (P.), B., 789.
- extraction of, from rocks (CULLEN, HARPER, and U.S. SMELTING, REFINING, & MINING Co.), (P.), B., 744.
- inhibition of the glow of (EMELÉUS), A., 777.
- vapour, low-voltage arcs in (DUFFENDACK and HUTHSTEINER), A., 1073.
- atoms, energy levels of (ALLISON), A., 214.
- and its compounds, combustion of gases containing (NOYES, WEIGEL, and VICTOR CHEMICAL WORKS), (P.), B., 743.
- action of, on silver and other metallic salts (WALKER), A., 812.
- action of water and hydrogen on (IPATIEV and NIKOLAJEV), A., 487.
- equilibrium of manganese, carbon, and, in basic open-hearth process (HERTZ), B., 490.
- distribution of, in iron and steel, etching mixtures to show (HEINRICH and VOIGT), A., 707.
- colourless (WOLF and RISTAN), A., 256.
- red, action of, on iodine in organic solvents (TRAXLER and GERMANN), A., 696.
- nucleic, in tissues (JAVILLIER and ALLAIRE), A., 969.
- white, effect of, on calcium and mineral metabolism (BERNHARDT and RABL; BERNHARDT), A., 1056.
- role of, in agriculture (VANSTONE), B., 505.
- distribution of, in blood (RONA and IWASAKI), A., 1051.
- in blood, effect of sugars and insulin on (BARRENSCHEEN, DOLESCHALL, and POPPER; BARRENSCHEEN and BERGER), A., 1270.
- balance of, in tissues (JAVILLIER and ALLAIRE), A., 1268.
- in diet, and its intestinal absorption (ORR, HOLT, WILKINS, and BOONE), A., 862.
- effect of exercise, rest, and sleep on excretion of (KLEITMAN), A., 639.
- in the body, in relation to age, growth, and food (SHERMAN and QUINN), A., 635.
- poisoning. See under Poisoning.
- Phosphorus alloys with copper and tin (GLASER and SEEMANN), B., 411.
- Phosphorus compounds, production of (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 631*.
- with cobalt bases (KLEMENT), A., 1219.
- assimilation of, in dairy cows (MILLER; MEIGS, TURNER, HARDING, HARTMAN, and GRANT), A., 862.
- absorption and excretion of (ARISTOWSKY), A., 318.
- distribution of, in blood (POSTERNAK), A., 536.
- in blood and bone on antirachitic diets (DUTCHER, CREIGHTON, and ROTHROCK), A., 437.
- absorption of, in the intestine (BERGEIM), A., 1170.
- distribution of, in muscle and in blood (CUTHBERTSON), A., 198.
- in milk (RIMINGTON and KAY), A., 970.
- excretion of, in urine (GREENVALD and GROSS), A., 206.
- Phosphorus pentachloride, electrical conductivity of (HOLROYD, CHADWICK, and MITCHELL), A., 15.
- chlorides, action of gaseous ammonia on (PERPÉROT), A., 137.
- action of menthol on (MIŁOBEDZKI and KOLITOWSKA), A., 730.
- oxychloride. See Phosphoryl chloride.
- halides, double decomposition of, with halides of metals and metalloids (KARANTASSIS), A., 812.
- trihydride (*phosphine*), optically active oxides of (MEISENHEIMER), A., 1237.
- utilisation of energy liberated during oxidation of (BESEMFELDER), (P.), B., 320.
- nitride (MOLDENHAUER and DÖRSAN), A., 697.
- pentoxide, manufacture of (I. G. FARBENIND.), (P.), B., 584; (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 584*.
- purification of (FINCH and FRASER), A., 260.
- vapour pressure of (HOEFLAKE and SCHEFFER), A., 342.
- Hypophosphorous acid, and its calcium salt, determination of (ZIVY), A., 490.
- and its salts, determination of, volumetrically (KÖSZEGRİ), A., 702; (KOLTHOFF), A., 1018.
- Phosphorous acid, determination of (ZIVY), A., 490.
- Phosphites, complex (ROSENHEIM, FROMMER, GLÄSER, and HÄNDLER), A., 696.
- Phosphoric acid, catalytic preparation of (I. G. FARBENIND.), (P.), B., 916.
- manufacture of (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 273, 320; (LILJENROTH), (P.), B., 320, 665; (KYBER and BRITZKE; KYBER), (P.), B., 664; (CHEM. FABR. GRIESHEIM-ELEKTRON and SUCHY), (P.), B., 745*;
- (LILJENROTH and PHOSPHORUS-HYDROGEN Co.), (P.), B., 789*.
- and its potassium salt, production of (ROSS, JONES, and MEHRING), (P.), B., 946.
- concentration and purification of (LA BOUR), (P.), B., 915.
- purification of, and preparation of its salts, pure (A.-G. CHEM. PROD. SCHEIDEMANDEL and BRAUN), (P.), B., 236.
- purification of, from arsenic (WOLFES and MAEDER), (P.), B., 53*.
- action of, on terpenes (CARTER, SMITH, and READ), B., 75.
- and its salts in soils and soil solutions (v. WRANGELL; v. WRANGELL and KOCH; v. WRANGELL and HAASE), B., 841; (v. WRANGELL and MEYER), B., 842.
- of soils, utilisation of (WITYN), B., 250.
- in fatigued frog's muscle (EMBDEN and HENTSCHEL; ALTMANN), A., 427.
- excretion of, in urine (TSUCHIYA), A., 538.
- determination of, nephelometrically (KLEINMANN), A., 1068.
- determination of, in small amounts of material (SAMSON), A., 328.
- determination of, colorimetrically, in dilute solutions (v. WRANGELL), B., 841.
- determination of, as magnesium ammonium phosphate (JÖRGENSEN), B., 250.
- determination of, as its uranyl salt (SOMEXA), A., 702, 1116.
- determination of, volumetrically, in serum (SAMSON), A., 763.
- determination of, in soils (NEMEC), B., 763.
- available, determination of, in soils (ENGELS), B., 600; (HÄHNE), B., 1023.
- available, determination of, in calcareous soils (DAS), B., 456.
- determination of, volumetrically, in yeast (STAIGER), A., 212.
- Orthophosphoric acid, constitution of (BAILLY and GAUMÉ), A., 1225.
- Phosphates, investigation of, nephelometrically (PINCUSSEN and JULIUSBERGER), A., 1284.
- decomposition of (LOMBARDO), (P.), B., 360.
- effect of colloidal silica on availability of (GILE and SMITH), B., 168.
- utilisation of, by plants (DOMONTOVICH), A., 762.
- application and action of, in black soils (EGOROV and MAKOV), B., 763.
- excretion and hydrolysis of, by the kidneys (BRULL and EICHHOLTZ; EICHHOLTZ, ROBINSON, and BRULL), A., 88.
- available, production of (MEYERS and ARMOUR FERTILIZER WORKS; PIERRON), (P.), B., 507.
- citrate-soluble, manufacture of (DISTILLERIE DE RUYSBROECK), (P.), B., 893.
- crude, decomposition of (LANDWIRTSCHAFTLICHE WAREN-ZENTRALE A.-G.), (P.), B., 843.
- with peat (ROZANOV), B., 1023.

Phosphorus:—

- Phosphates, mineral, decomposition of (KRAUTZ and DE MOLTKE-HUITFELDT), (P.), B., 251.
 determination of, electrometrically (BODFORSS), A., 1018.
 Pyrophosphates, use of, in analysis (STREBINGER and POLLAK), A., 492.
 complex (ROSENHEIM, FROMMER, GLÄSER, and HÄNDLER), A., 696.
 Superphosphates, manufacture of (HYDE), (P.), B., 103;
 (KLUGH and FEDERAL PHOSPHORUS Co.), (P.), B., 558.
 treatment of (ARMSTRONG), (P.), B., 558.
 Phosphides, reactions of alkaline-earth oxides with (HEDVALL), A., 368; (HEDVALL and NORSTRÖM), A., 695.
 Tetraphosphorus triselenide (MAI), A., 1113.
 Phosphorus pentasulphide, action of ethyl alcohol on (PISCHT-SCHIMUKA), A., 145.
 Phosphorus organic compounds (ZETZSCHE and NACHMANN), A., 46, 705, 1242; (ZETZSCHE and ZURBRÜGG), A., 497; (NYLÉN), A., 826; (CASSELLA & Co.), (P.), B., 996; (ZETZSCHE and AESCHLMANN), A., 1225.
 autolysis of, in tissues (GYÖRÖY), A., 93.
 Phosphoric acid, esters of, with polyhydric alcohols, manufacture of (GOISSEDET, HUSSON, and Soc. CHIM. USINES DU RHÔNE), (P.), B., 964.
 Pyrophosphoric acid, acid esters of (NEUBERG and WAGNER), A., 757.
Phosphorus determination:—
 determination of (MARTLAND and ROBISON), A., 968.
 determination of, colorimetrically (FISKE and SUBBAROW), A., 443.
 determination of, in blood (MACHEBEUF), A., 1067.
 determination of, colorimetrically, in blood (ROE, IRISH, and BOYD), A., 763.
 determination of, in tungsten steels (ROONEY and CLARK), B., 493.
 Phosphoryl chloride (*phosphorus oxychloride*), compound of choline chloride with (RENSHAW and WARE), A., 155.
 Phosphorylation, action of arsenates on (NEUBERG and KOBEL), A., 1108.
 Photoactive substances, colour reaction for (VOLLMER), A., 980.
 Photoactivity (VOLLMER), A., 920, 980; (VOLLMER and SEREBRIJSKI), A., 1181; (HENNING and SCHAEFER), A., 1279.
 Photochemical absorption and transformation of radiation (KÖGEL), A., 1014.
 equivalence, law of (LASAREV), A., 919.
 oxidation of organic compounds by chromates (PLOTNIKOV), A., 253.
 reactions (COEHN and HEYMER), A., 1112.
 measurement of (PLOTNIKOV), A., 584.
 influence of intensity of light on (BRIERS, CHAPMAN, and WALTERS), A., 484.
 with polarised and ordinary light (GHOSH and PURKAYESTHA), A., 366.
 with complex light (PADOA and VITA), A., 808.
 yield of, with complex light, compared with that from component lights (PADOA), A., 584; (PADOA and VITA), A., 1014.
 kinetics of (WEGSCHEIDER), A., 135.
 relation between velocity of, and wave-length (LASAREV), A., 584.
 additive rule in (BERTHOUD), A., 484.
 after-effect in (MUKERJI and DHAR), A., 366.
 in presence of charcoal and of copper (SANDONNINI), A., 252.
 in presence of iodine (MUKERJI and DHAR), A., 252.
 with silver halides (SCHMIDT), B., 646.
 researches (MUKERJI and DHAR), A., 1216.
 studies (REYCHLER), B., 219, 515.
 transformations in the triphenylmethane series (LIFSCHITZ), A., 61.
Photochemistry (RIDEAL), A., 583.
 laws of (PLOTNIKOV), A., 583.
 surface catalysis in (HIRST and RIDEAL), A., 34.
 Photocollographic printing plates, films for (DE' SPERATI and ARGENTOGRAFICA, LTD.), (P.), B., 966.
Photo-electric effect in high vacua (RIETSCHEL), A., 653.
 influence of adsorbed gases on (PREDVODITELEV), A., 993.
 of surface layers of liquids (ZIMMERMANN), A., 886.
 compound (AUGER), A., 1188.
 inverse (LORENZ), A., 330.
 emission and light quanta (BARKLA), A., 447.

- Photo-electric fatigue (PREDVODITELEV and WITT), A., 330.
 sensitivity, distribution of (RUMPF), A., 768.
 thresholds in relation to optical and electrical properties (HAMER), A., 1188.
 in relation to the quantum theory (HAMER), A., 1073.
Photo-electrons, direction of emission of (AUGER and PERRIN), A., 876.
Photographs, production of, on parchment, paper, etc. (JELLEY), (P.), B., 693.
 colour-, production of (TAYLOR and FAMOUS PLAYERS-LASKY CORP.), (P.), B., 109.
 Laue, apparatus for production of (NORTON), A., 227.
 stereographic protractor for (HUTCHINSON), A., 593.
Photographic blackening, new law of (KELLNER), B., 467.
 by low speed electrons (COLE), A., 1189.
 copying (A.-G. FÜR ANILIN-FABR.), (P.), B., 997.
 by means of phosphorescent substances (CHRISTENSEN), (P.), B., 110*.
 desensitisation (LÜPPO-CRAMER), B., 966.
 desensitisers, nitro-compounds as (LÜPPO-CRAMER), B., 646.
 developers (SCHESTAKOFF and MEREJKOVSKY), (P.), B., 566, 805*; (BINDER), (P.), B., 693*.
 for use in bright light (HILDEBRANDT), (P.), B., 300.
 fogging action of thiocarbamides in (RAWLING), B., 721.
 containing diaminophenol and *p*-phenylenediamine in bisulphite solution (LOBEL and BUNEL), B., 805.
 metolquinol and metoquinono, comparison of (MÜLLER; HÜBL), B., 997.
 development, topographical relations in (LÜPPO-CRAMER), B., 387.
 paradoxes (LÜPPO-CRAMER), B., 387.
 effect of desensitisers in (CRABTREE and DUNDON), B., 853.
 in bright light (BINDER), (P.), B., 566.
 behaviour of silver bromide grain during (DAVIDSON), B., 515.
 emulsions, characteristics and anomalies of, on development (SHEPPARD), B., 466.
 reversal process for (LANGER), (P.), B., 109.
 sensitivity of (RAWLING and GLASSETT), B., 1029.
 sensitivity of, in relation to quantum energy in exposure (SHEPPARD and TRIVELLI), B., 1030.
 changing the light-sensitiveness of (SHEPPARD and EASTMAN KODAK Co.), (P.), B., 805.
 relation between colour sensitivity of, of differing silver iodide content (JAHR), B., 646.
 treatment of, with colour-sensitising compositions (WALL, COMSTOCK, and KALMUS, COMSTOCK, & WESCOTT), (P.), B., 421.
 dye composition for treatment of (WALL, COMSTOCK, and KALMUS, COMSTOCK, & WESCOTT), (P.), B., 421.
 infra-red sensitisers for (GUTENKUNST and EASTMAN KODAK Co.), (P.), B., 265.
 gelatin surfaces (J. & E. LEYDE), (P.), B., 300.
 silver acetylido (KÖGEL), B., 612.
 silver bromide, action of light on, and rôle of sensitising nuclei (TOY), B., 612.
 silver halide (A.-G. FÜR ANILIN-FABR.), (P.), B., 722.
 sensitisation of, for X-rays (SCHWARZ), (P.), B., 722.
 ripening of (JENISCH), B., 965.
 comparative spectral sensitivity of, and action of colour sensitisers (EDER), B., 611.
 sensitisation of, and bleaching of dyes (SHEPPARD), B., 467.
 silver iodide (BALDSIEFFEN, SEASE, and RENWICK), B., 466.
 silver iodide and iodide-bromide, spectral sensitivity of (HUSE and MEULENDYKE), B., 611.
 analysis of (CLARK), A., 590.
 determination of silver in (STEIGMANN; MEIDINGER), B., 387.
 etching, resist for (BEEBE and WADSWORTH WATCH CASE Co.), (P.), B., 517.
 exposure, relation between time and intensity in (JONES, HUSE, and HALL), B., 566; (JONES and HALL), B., 1030.
 exposures, relation between intermittent and non-intermittent sector-wheel (DAVIS), B., 932.
 films (KODAK, LTD. and HASTE), (P.), B., 29*; (STANGE), (P.), B., 421; (KODAK, BENT, and CROWTHER), (P.), B., 516.
 method of marking (TAYLOR, CHANDLER, and TAYLOR LABORATORIES), (P.), B., 854.
 photochemistry of (WEIGERT; EGGERT and NODDACK), B., 109.
 sensitisation of (BRETT), A., 552.

- Photographic films, for instantaneous exposure with X-rays (SPECKLIN), (P.), B., 300.
- non-inflammable cellulose acetate (MALONE, CARROLL, and EASTMAN KODAK Co.), (P.), B., 516.
- non-static (HOFFMAN and DU PONT DE NEMOURS & Co.; PITMAN and DU PONT DE NEMOURS & Co.), (P.), B., 341.
- old, desilvering of (TRAXL), (P.), B., 300.
- stripping, manufacture of (VEITINGER), (P.), B., 467.
- fixing baths, effect of, on metals (EULE), B., 29.
- images, development of, from diazo-compounds (KALLE & Co.), (P.), B., 300; (BATTEGAY and BRAUN), B., 854.
- production of, in relief (DE PROCONDINE-GORSKY and POZNIAKOW), (P.), B., 220, 854*, 1030*.
- in colours on fabrics (MICHEL), (P.), B., 722.
- latent, development of (REYCHLER), B., 515.
- intensification of, by dye-toning (A. & L. LUMIÈRE and SEYEWETZ), B., 421.
- silver, toning of (PETERS), (P.), B., 300.
- mordanting of, by cupric thiocyanate (A. & L. LUMIÈRE and SEYEWETZ), B., 933.
- sulphide-toned silver, toning of (LEONAR-WERKE ARNDT & LÖWENGARD), (P.), B., 421.
- layers (SCHWARZ), (P.), B., 805*.
- materials, sensitising of (MICHEL), (P.), B., 77.
- colour sensitivity of (MEES), B., 566.
- spectral distribution of sensitivity of (JONES and SANDVIR), A., 694.
- light-sensitive (SHEPPARD and EASTMAN KODAK Co.), (P.), B., 341*; (PUNNETT and EASTMAN KODAK Co.), (P.), B., 1030*.
- media and process (BEEBE, MURRAY, and WADSWORTH WATCH CASE Co.), (P.), B., 300*.
- negatives and diapositives, reduction of (PLAGWITZ), (P.), B., 220.
- paper (SURY), (P.), B., 220*; (KODAK, BENT, and CROWTHER), (P.), B., 516.
- preparation of (KODAK and BENT), (P.), B., 77.
- sensitivity of (MAUGE), B., 467.
- influence of desensitisers on coloured tints of (MILBAUER and LAUSCHMANN), B., 300.
- contrast of (JONES), B., 996.
- gold-toning of (STEIGMANN), A., 923.
- positive blue-print (DÜRENER FABR. PRÄPARIERTER PAPIER RENKER & Co.), (P.), B., 300.
- print-out (JOHNSON), (P.), B., 517.
- plates, mechanical actions on (REYCHLER), B., 219.
- for measurement of radiations (FABRY), A., 765.
- effect of evacuation on sensitivity of (MASAKI), B., 693.
- relation between colour sensitiveness and gradation in (BAKER and BALMAIN), B., 612.
- nature of optical sensitisation and desensitisation of (KÖGEL and STEIGMANN), B., 386.
- contamination of, by traces of red-sensitising agents (v. ANGERER), B., 142.
- colour-sensitive, desensitisation of (HÜBL), B., 612.
- arrest of development in testing of (RAWLING), B., 467.
- influence of adrenaline on (VOLLMER), A., 920.
- fogging action of hydrogen peroxide on (CLARK), B., 253.
- action of sawdust and cholesterol on, after irradiation (LUCAS), A., 586.
- effect of vitamin-containing substances on (VOLLMER), A., 980.
- dry, influence of strong heating on properties of (KELLNER), B., 387.
- sensitised and fogged, reversing action of red and infra-red rays on (MIYANISHI), B., 1029.
- process (BEEBE, MURRAY, and WADSWORTH WATCH CASE Co.), (P.), B., 773.
- condensation (BEEBE, MURRAY, HERLINGER, and WADSWORTH WATCH CASE Co.), (P.), B., 773.
- natural resin (BEEBE, MURRAY, and WADSWORTH WATCH CASE Co.), (P.), B., 773.
- synthetic resin (BEEBE, MURRAY, HERLINGER, and WADSWORTH WATCH CASE Co.), (P.), B., 773.
- printing, light-sensitive preparations for (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 220.
- reversal process (CARSTAFF and EASTMAN KODAK Co.), (P.), B., 219, 1030*; (BELLIOU), B., 693; (EASTMAN KODAK Co.), (P.), B., 997.
- screens, multicoloured (CHRISTENSEN), (P.), B., 110*.
- Photographic sensitisation by nuclei of silver sulphide (SHEPPARD), B., 219.
- sensitisers, chemical (KÖGEL and STEIGMANN), B., 467.
- effect of concentration of, on speed and fog corrections (SHEPPARD), B., 773.
- of gelatin (A. & L. LUMIÈRE and SEYEWETZ), B., 466.
- for the infra-red (DUNDON, SCHOEN, and BRIGGS), B., 566.
- and media (BEEBE, MURRAY, and WADSWORTH WATCH CASE Co.), (P.), B., 421.
- sensitivity (SHEPPARD), B., 853.
- silver deposits, covering power of (SHEPPARD), B., 902.
- solarisation (BELLIOU), B., 721.
- solutions, recovery of silver from precipitates in (SEGARRA), (P.), B., 220.
- toning bath, selenium (LEONAR-WERKE ARNDT & LÖWENGARD), (P.), B., 300, 421.
- Photography, fifty years of (MEES), B., 854.
- theory of Carbro process for (TRITTON), B., 388.
- copying drawings and printed matter by (A.-G. FÜR ANILIN-FABR.), (P.), B., 722.
- colour (KELLEY, TRONOLONE, and KELLEY COLOR LAB.), (P.), B., 29*; (MANNES and GODOWSKY), (P.), B., 220*.
- films for (BERTHON, and SOCIÉTÉ DU FILM K.D.B.), (P.), B., 997.
- dye-transfer process for (v. ARX), (P.), B., 997.
- screens for (KELLER), (P.), B., 173.
- See also Kinematograph.
- Photomechanical printing process (DE NAGY), (P.), B., 722*.
- Photometer, König-Martens, corrections for width of slit in measurements with (HOFFMANN), A., 784.
- Photometer tube for ultra-violet spectroscopy (SCHAUM and KELLNER), A., 493.
- Photometry, studies in (SCHAUM and KELLNER), A., 493.
- of spectral lines (HEINRICH), A., 649.
- heterochromatic (SCHLAEPFER), B., 167.
- validity of flicker photometer measurements in (HARDY and NOTTAGE), B., 775.
- photoelectric, use of arcs in (KURRELMEYER), A., 593.
- photographic, with intermittent exposure (KELLNER), B., 467.
- ultra-violet, gelatin wedges for (DOBSON and HARRISON), A., 706.
- Photophoresis (PATTERSON and WHYTE-LAW-GRAY), A., 1211.
- theory of (HETTNER), A., 1013.
- Photosynthesis (DE FAZI), A., 289.
- mechanism of (SPOHR; SPOHR and MCGEE), A., 1182.
- in relation to water content (DASTUR), A., 98.
- by chlorophyll, photochemical equivalent law applied to (WURMSER), A., 486.
- by *Chlorella* (ADAMS), A., 308.
- of organic compounds (DE FAZI), A., 835.
- isoPhthalaldehyde bisphenylhydrazono (KALB and GROSS), A., 614.
- o-Phthalaldehydic acid, preparation of (FUSON), A., 612.
- Phthalan, dihydroxy-, and its dibenzoyl derivative (KUBOTA and HAYASHI), A., 520, 1041.
- Phthalins, preparation of, from naphthalene (GEORGE), A., 1149.
- Phthalic acid, manufacture of (GREEN), (P.), B., 480.
- mixture of phthalyl peroxide and, in styptics (DOWNS), (P.), B., 173.
- thallous salt (CHRISTIE and MENZIES), A., 56.
- ethyl ester, detection of, in spirits (SCHMITT), B., 459.
- terpene esters (PAOLINI), A., 175.
- Phthalic acid, 3-nitro-, α -mono-*n*-amyl and -loxy esters of (MARVEL and BRODERICK), B., 104.
- isoPhthalic acid, mono- and di-bromo- and monochloro-dihydroxy-, and their salts (HEMMELMAYR and MEYER), A., 404.
- Phthalic anhydride, manufacture of (DU PONT DE NEMOURS & Co.), (P.), B., 817.
- Phthalideacetic acid, derivatives of (EDWARDS), A., 835.
- 1:2-Phthalide-4-acetic acid, and its amide (PERKIN and STONE), A., 64.
- p-Phthalimidobenzoic acid, and tetrachloro-, ethyl esters (GORI), A., 1037.
- Phthalimidoethanesulphonic acid (BALABAN), A., 623.
- γ -Phthalimido- β -hydroxypropylmalonic acid, ethyl ester (TOMITA), A., 1129.
- o-Phthalimidophenyl o-disulphido (BOGERT and STULL), A., 310.
- Phthalimido-(γ -phthalimido- β -hydroxypropyl)malonic acid. See α -Diphthalimido- γ -hydroxy-*n*-butane- $\alpha\alpha$ -dicarboxylic acid.

- Phthalonic acid**, constitution of chlorine derivatives of (CORNILLOT), A., 168.
- Phthaloyl-2:5-dimethylselenophen** (BOGERT and ANDERSEN), A., 311.
- Phthalyl peroxide**, mixture of phthalic acid and, in styptics (DOWNS), (P.), B., 173.
- Phthalylbenzidine**, derivatives of (LE FÈVRE and TURNER), A., 1131.
- Phylloxera**, destruction of (HORST), (P.), B., 559.
- Physical chemistry**, anticipation of modern views on (v. LIPPMANN), A., 493.
- Physiological action and chemical constitution** (STEDMAN), A., 974.
- fluids rich in albumin and in globulin, distinction between (ROSENFELD), A., 424.
- analysis of (LORBER), A., 211.
- electrometrically (MISLOWITZER), A., 442; (MISLOWITZER and SCHAEFER), A., 443.
- material, ashing of (WEBER and KRANE), A., 1284.
- Phytin** content of foodstuffs (AVERILL and KING), B., 381.
- Phytobiochemical studies** (ZLATAROV), A., 210.
- Phytochemistry** (ROSENTHALER), A., 210.
- Phytophthora colocasia**, toxicity of organic compounds to spores of (UPPAL), A., 975.
- Phytosterol**, use of sintered glass crucibles for separation of digitoninesteride in examination of fats for (PRESCHER and CLAUS), B., 285.
- irradiated, antirachitic value of (HESS, WEINSTOCK, and SHERMAN), A., 207, 546.
- Piazodonium hydroxide**, and its salts (HUGEL), A., 183.
- Picea excelsa**, turpentine from (VELCELESCU), B., 594.
- Pickeringite** from Portland, Connecticut (SCHAIER and LAWSON), A., 494.
- Pickling liquor**, use of soaps and colloids for purification of (WALTER), B., 582.
- spent, reclaiming of (MARSH, COCHRAN, and AMER. COPPERAS Co.), (P.), B., 708.
- α -Picoline**, action of, on alkali hexachloroiridates (GUILLOT), A., 737, 958.
- hydrogen α -picolinotetrachloroiridate (GUILLOT), A., 737.
- compound of tetrabromoethane and (FULTON), A., 305.
- Picolinic acid**, chloride of, and chloro-, and its derivatives (SPÄTH and SPITZER), A., 958.
- Picolinium hexachloroiridate** (GUILLOT), A., 958.
- Picolinopentachloroiridic acid**, salts of (GUILLOT), A., 958.
- Picolinyl chloride**, aldehyde from (ROJAHN and SCHULTEN), A., 842.
- Picramide**, diazotisation of (BLANGÉY), A., 62.
- Picric acid**, distribution of, between water and benzene (VON NESSENSKI and TSCHEMUTOV), A., 788.
- Pieryl chloride**, action of cyanamide on (GIUA), A., 59.
- reaction of, with pyridine in alcoholic solution (HODGES), A., 1107.
- Pierylazothiocarbamide** (GIUA and PETRONIO), A., 62.
- Pieris brassicae** and *napi* (white butterfly), white wing pigment of (SCHÖPF and WIELAND), A., 1168.
- Pigs**, formation of fat in (ELLIS and HANKINS), A., 197.
- young, effect of diets of fresh and treated milk on metabolism of (MAGER and HARVEY), A., 970.
- Pigments**, manufacture of (RAHTJEN and RAGO), (P.), B., 1020.
- from galena (MORGANS), (P.), B., 595.
- finely subdivided (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 7.
- optical examination of (BLOM), B., 760.
- effect of various solvents on the absorption spectra of (SZILÁRD), A., 557.
- measurement of brightness of (SCHAEFER), B., 167.
- fastness of, to light (WAGNER), B., 166, 247.
- fixation of, by heat (VAN CUYCK), (P.), B., 638.
- properties of particles in (KLEIN), B., 954; (HEATON), B., 955.
- influence of number and size of particles on covering power of (KÜHN), B., 287.
- particle size of, and its influence on paints (VAN HOEK), B., 449.
- binding medium for (LORENZ), (P.), B., 22.
- so-called black and white content of, in the Ostwald colour-system (SCHAEFER), B., 638.
- extraction of manganese from (SOUVIRON), (P.), B., 889.
- antimony sulphide red, production of (SOUVIRON), (P.), B., 451.
- carbon (WARD), (P.), B., 373.
- Pigments**, green, manufacture of (I. G. FARBEIND.), (P.), B., 955.
- composite green (DOURIF), (P.), B., 680.
- inorganic, examination of, in the dark field of the quartz-lamp (EIBNER, WIDENMAYER, and STOIS), B., 759.
- iron oxide, manufacture of (MACMILLAN and NIAGARA PIGMENT CORP.), (P.), B., 889.
- effect of, on rate of oxidation of linseed oil (RHODES and COOPER), B., 99.
- lake, fillers for (EBERLEIN and COLLOISIL COLOUR Co.), (P.), B., 680.
- permanent (EBERLEIN and COLLOISIL COLOUR Co.), (P.), B., 796; (DEUTSCHE GASÖLÜHLICHT-AUERGES.), (P.), B., 955.
- plastid, in tissues, absorption spectra of (LJUBIMENKO), A., 439.
- titanium (KLEIN and BROWN), (P.), B., 99; (WEIZMANN and BLUMENFELD), (P.), B., 373; (BLUMENFELD and MAYER), (P.), B., 680.
- titanium oxide, preparation of (WEIZMANN and BLUMENFELD), (P.), B., 889.
- titanium and zinc, manufacture of (PIPEREANT and HELBRONNER), (P.), B., 681*.
- white (SOC. GÉN. FABR. COULEURS ET PROD. CHIM.), (P.), B., 889.
- evaluation of (EIBNER), B., 414.
- white lead (WÜRTH), B., 760.
- fast yellow various, constitution of (ROWE, BURR, and CORBISHLEY), B., 310.
- zinc oxide, effect of, on rate of oxidation of linseed oil (RHODES and MATHES), B., 201.
- zirconium oxide (KINZIE and TITANIUM ALLOY MANUF. Co.), (P.), B., 760.
- See also Paints.
- Pilocarpine**, effect of narcotics on the action of, on the intestine (RYDIN), A., 320.
- effect of, on lymph (PETERSEN and HUGHES), A., 205.
- n*-Pimelonitrile**, boiling point of (VERKADE, HARTMAN, and COORS), A., 686.
- Pinacones** (LEERS), A., 596, 711.
- dehydration of (LOCQUIN and LEERS), A., 599, 711.
- catalytic action of reduced copper on (YAMAGUCHI), A., 727.
- Pinacyanols**, constitution of (ROSENHAUER, SCHMIDT, and UNGER), A., 1260.
- Pinakryptol green and yellow**, desensitising by (CRABTREE and DUNDON), B., 853.
- Pine oil**, extraction of (STEVENSON and LITTLE Co.), (P.), B., 924.
- colourless, production of (PRAETORIUS), (P.), B., 22.
- dehydration of (PALMER and NEWPORT Co.), (P.), B., 797.
- and its autoxidation (EPFLE and RUHEMANN), B., 298.
- Pineapples**, manganese chlorosis of (JOHNSON), B., 105.
- Pine-seeds**, germinating, determination of lipase in (NICOLAI), A., 1059.
- Pinene**, catalytic isomerisation of (RICHTER and WOLFF), A., 1148.
- distinction between nopinene and (GASPOULOS), A., 1148.
- Pinenes**, action of picric acid on (DELÉPINE and ADIDA), A., 841.
- Piniocamphone**, pharmacology of (SIEGEL), A., 320.
- Pinus cembra**, resin in needles of (PIGULEVSKI and VLADIMIROVA; PIGULEVSKI), A., 210.
- Pinus pinca**, acid constituents of resin of (DUFONT and DUBOURG), A., 954.
- Pinus strobus**, formation and transformation of ethereal oil in (PIGULEVSKI and VLADIMIROVA), A., 211.
- Piperazine**, dithio-, toxicity of (SUPNIEWSKI), A., 1173.
- Piperazines**, methylation of (ABDERHALDEN and HAAS), A., 79, 181.
- compounds of amino-acids with (ABDERHALDEN and KOHL-EGGER), A., 1047.
- Piperazinebisdihydroisoindolium bromide** (v. BRAUN, GOLL, and ZOBEL), A., 740.
- Piperazineditetrahydroisoquinolinium bromide** (v. BRAUN, GOLL, and ZOBEL), A., 740.
- 4-Piperazinodiphenyl**, 4-bromo- and 4-chloro-2:3'-dinitro- (LE FÈVRE and TURNER), A., 1029.
- Piperazyltheobromine** (VIEL), (P.), B., 611.
- Piperidine**, use of, as reagent for quinones and dyes (DILTHEY and WIZINGER), A., 1163.
- derivatives, preparation of (MANNICH and BALL), A., 522; (McELVAIN), A., 1044.
- Piperidine**, 4-hydroxy-, and its methyl derivative, ultra-violet absorption spectra of (RIEDEL and REINHARD), A., 734.

- Piperidines, 4-hydroxy-, manufacture of derivatives of (SOC. CHEM. IND. IN BASLE), (P.), B., 219*.
- Piperidinium-2-methyl-5-ethylpiperidinium (BRAUN and ZOBEL), A., 1150.
- Piperidinium-2-methylpiperidinium bromide (v. BRAUN and ZOBEL), A., 1150.
- β -Piperidino- α -*p*-aminophenylpropionic acid dihydrochloride (MANNICH and STEIN), A., 166.
- 9-Piperidinoanthrone, 1:8-dichloro- (BARNETT, COOK, and MATTHEWS), A., 206.
- 1-Piperidinobenzene, 3:5-dichloro-4:6-dinitro- (BORSCHKE and TRAUTNER), A., 390.
- β -Piperidino- β -benzylbutane, and its chloroplatinate (BRUYLANTS), A., 826.
- γ -Piperidinobutacetal (MANNICH and HORKHEIMER), A., 504.
- γ -Piperidinobutaldehyde, and its chloroaurate (MANNICH and HORKHEIMER), A., 504.
- α -Piperidino- $\Delta\beta$ -butenonitrile (BRUYLANTS), A., 826.
- γ -Piperidinobutyl alcohol, derivatives of (MANNICH and HORKHEIMER), A., 504.
- 1-*N*-Piperidino-5:3':4'-dimethoxyphenyl-4-penten-3-one hydrochloride (MANNICH), (P.), B., 901.
- 4-Piperidinodiphenyl, 2':3:4'-trinitro- (LE FÈVRE and TURNER), A., 1029.
- α - β -Piperidinoethylpiperidinomethylbenzene, and its salts (v. BRAUN, KÜHN, and GOLL), A., 1259.
- 2- β -Piperidinoethyltetrahydroisoquinoline, and its salts (v. BRAUN, KÜHN, and GOLL), A., 1259.
- β -Piperidino- α -hydroxy- α -*o*-nitrophenylpropionic acid (MANNICH and STEIN), A., 166.
- α -Piperidino- α -methylbutyronitrile (BRUYLANTS), A., 826.
- γ -Piperidino- γ -methylpentane (BRUYLANTS), A., 826.
- 1-*N*-Piperidino-5:2:3':4'-nitromethylenedioxyphenyl-4-penten-3-one, and its hydrochloride (MANNICH), (P.), B., 901.
- 2-Piperidino-1:6:8-trinitronaphthalene (VAN DER KAM), A., 1240.
- β -Piperidino- α -*p*-nitrophenylpropionic acid (MANNICH and STEIN), A., 166.
- β -Piperidino- β -phenylbutane, and its chloroplatinate (BRUYLANTS), A., 826.
- 1-*N*-Piperidino-5-phenyl-4-penten-3-one hydrochloride (MANNICH), (P.), B., 901.
- γ -Piperidino- γ -phenyl- $\Delta\alpha$ -propene, and its chloroplatinate (BRUYLANTS), A., 826.
- dl*-2-Piperidone, 3-amino-, acetyl derivative. See Acetylanhydro-*dl*-ornithine.
- 1-Piperidylcyclohexane, 1-cyano-, and its hydrochloride (KÖTZ and MERKEL), A., 721.
- Piperitone (EARL and READ), A., 1040.
- Piperonal-2-methylsemicarbazone (BACKER and MULDER), A., 182.
- ω -Piperonylacetophenone, and its copper derivative (BRADLEY and ROBINSON), A., 1146.
- Piperonyl- α -furylcarbinyl benzoate (GREENE), A., 407.
- Piperonyl ethyl ether (EDWARDS), A., 735.
- N*- β -Piperonyl-ethyl-3:4-methylenedioxyhomophthalamic acid, and its methyl ester (HAWORTH and PERKIN), A., 964.
- N*- β -Piperonyl-ethyl-3:4-methylenedioxyhomophthalimide (HAWORTH and PERKIN), A., 964.
- p*-Piperonylideneaminobenzoic acid, ethyl ester (GORT), A., 1037.
- Piperonylideneacyanoacetic acid, 6-bromo- (BAKER), A., 732.
- Piperonylidene-*dl*-piperitone (EARL and READ), A., 1040.
- β -Piperonylpropionamide, β -6-bromo- (BAKER), A., 732.
- β -Piperonylpropionic acid, 6-bromo-, and its derivatives (HAWORTH, PERKIN, and STEVENS), A., 952.
- β -Piperonylpropionitrile, β -6-bromo- (BAKER), A., 732.
- Piperonylpyruvic acid, oxime of (EDWARDS), A., 735.
- Pipes, coating material for (TALBOT), B., 837.
- Pipettes, micro-wash-out (SCHUECKER), A., 706.
- for potassium determinations (BIBLE), A., 265.
- Pistons, motor, aluminium alloy for (ALUMINIUM-IND. A.-G.), (P.), B., 330.
- Pisum arvense unicolor*, phosphatides of (GRAFE and MAGISTRIS), A., 1280.
- Pitch, vacuum distillation of, with super-heated steam (DUNKEL), B., 865.
- coking of (SPERR and KOPFERS Co.), (P.), B., 84.
- determination of coefficient of cubical expansion of (MALLISON, JACOBSON, and SARRE), B., 264.
- hard, manufacture of (PROBOD FABR. PROD. ORGANIQUES and LÉVY), (P.), B., 575.
- Pitchblende. See Uraninite.
- Pituitary body, active principles of (SCHLAPP), A., 546.
- oxytocic principle of (THORPE), A., 644.
- human, activity of active substance of posterior lobes of (LAMPE), B., 896.
- Pituitary extracts, active principles of (KNAUS), A., 205.
- action of, on constituents of (GIGON), A., 1063.
- Pituitrin, effect of, on action of insulin (LAMBIE), A., 869.
- effect of, on lymph (PETERSEN and HUGHES), A., 205.
- Pivalic acid, basic beryllium salt, crystal structure and constitution of (MORGAN and ASTBURY), A., 995.
- Placenta, proteolytic enzymes of (ARINSTEIN), A., 757.
- hormone from (GLIMM and WADEHN), A., 326.
- human, katabolism of sugar in (TATEYAMA), A., 90.
- Plagioclase, zonal growth of, in syenitic magma (Itô), A., 934.
- Plagiostomes, utilisation of skins of (EURENREICH and BENDIXEN), (P.), B., 705*.
- Planchéite, identity of shattuckite and (SCHÖER), A., 143.
- Plane. See *Platanus orientalis*.
- Plants, molecular structure of fibres of (SPONSLER), A., 760.
- chemistry of (STERN and ZELLNER), A., 646; (ZELLNER), A., 646, 983, 1281.
- extraction of essential principles of (FORAY), (P.), B., 253.
- the effect constant in growth of (RIPPEL; MITSCHERLICH), B., 1024.
- effect of length of day on development of (AUCHTER and HARLEY), A., 1280.
- heat of wetting of, in relation to soil fertility (McCOOL and ROMAINE), (P.), B., 799.
- cuticle of (LEE), A., 99.
- fatty substances of the growing points of (RHODES and WOODMAN), A., 761.
- physiological equilibrium in (RIPPEL and LUDWIG), A., 1280.
- allantoic acid in (FOSSE), A., 548.
- aluminium in (STOKLASA), A., 547.
- influence of boron on (CUSUMANO), B., 764.
- calcium oxalate in (FREY), A., 440.
- formation of carbamide by heating the juices of (FOSSE), A., 438.
- influence of acetaldehyde on carbohydrates in (SABALITSCHKA and WEIDLING), A., 645.
- effect of potassium in soils on carbohydrate metabolism of (ENGLIS and LUNT), A., 439.
- colloids in (SAMEO and KLEMEN), A., 22.
- effect of powdered dolerite on growth of (BLANCK and ALTEN), B., 70.
- activation of enzymes of, by ions (DOBY and HIBBARD), A., 1182.
- production of ethyl alcohol and acetaldehyde in (THOMAS), A., 208.
- incrustive substances of (HEUSER), A., 548.
- manganese in the growth of (McHARGUE), A., 438.
- action of nitrites on growth of (FEHÉR and VÁGI), A., 1066.
- experiments on, with nitrogen and helium (FREE), A., 1280.
- mechanism of oxydases in (ONSLow and ROBINSON), A., 1176.
- utilisation of nitrogen of peat by (KUPREENOK), B., 416.
- pectic substances of (NORRIS), A., 1183.
- utilisation of phosphates by (DOMONTOVICH), A., 762.
- phosphatides of (GRAFE and MAGISTRIS), A., 99, 1280; (LEVENE and ROLF), A., 982.
- and their relation to vitamin action (GRAFE and MAGISTRIS), A., 1279.
- influence of light on absorption of phosphoric acid and potassium by (NEMEC and GRACANIN), A., 647.
- porphyrins in (FISCHER and SCHWERTEL), A., 1280.
- potassium and ferric ferrocyanides as sources of iron for (DEUBER), B., 453.
- proteases in (WILLSTÄTTER, GRASSMANN, and AMBROS), A., 433, 543; (BLAGOVESTSCHENSKI), A., 434; (WILLSTÄTTER and GRASSMANN), A., 759.
- reductase in (PALLADIN, PLATISCHENSKI, and ELLADI; v. EULER and NILSSON), A., 95.
- effect of colloidal silica on growth of (GILE and SMITH), B., 168.
- deleterious action of smoke gases on (NOACK), B., 453.
- action of sodium carbonate on growth of (FEHÉR and VÁGI), A., 1066.
- tolerance of, for sodium chloride (LIPMAN, DAVIS, and WEST), B., 1023.
- effect of straw on growth of (COLLISON and CONN), B., 416.
- sulphur as food for (NELLER), B., 842.
- vitamin content of juices of (SCHARIFA), B., 339.

- Plants**, effect of, on culture solutions (HIBBARD), A., 547.
 nutrient solutions for (ZINZADZE), A., 1280.
 nutrition of, with aldehydes (SABALITSCHKA and WEIDLING), A., 871, 1182.
 assimilation of carbon dioxide by (HOLLUTA), A., 1011; (NELLENSTEYN), B., 35; (KÜGEL and STEIGMANN), B., 772.
 importance of soil carbon dioxide for nutrition of (LEMMERMANN), B., 378.
 rôle of carbon dioxide in growth of (REINAU), B., 558.
 effect of carbon dioxide on yield of (RIPPEL; GERLACH; EHRENBURG), B., 378.
 formaldehyde in assimilation of (KLEIN and WERNER), A., 439.
 utilisation of various substances in respiration of (KLEIN and PIRSCHLE), A., 1182.
 acetaldehyde in respiration of (KLEIN and PIRSCHLE), A., 439.
 influence of carbon dioxide on respiration of (THOMAS), A., 208.
 influence of sugars on respiration of (SPOEHR and MCGEE), A., 1182.
 insecticide for (KREIDL), (P.), B., 209.
 sprays for (BUCHNER and BACHMANN), (P.), B., 71; (DE LAROCHE), (P.), B., 764.
 improvement of the wetting power of (SOC. CHIM. USINES DU RHÔNE), (P.), B., 103.
 combined lead arsenate and lime sulphur sprays for (THATCHER and STREETER), B., 103.
 autotrophic, catalase in (GRAČANIN), A., 432.
 green, tissues of, determination of acid-hydrolysable carbohydrates in (MORRIS and WELTON), B., 930.
 green forage, proteins of (DAVIES), A., 761.
 higher, fixation of acetaldehyde in fermentation of (BODNÁR, SZEPESSY, and FERENCZY), A., 438.
 relation of energy balance to the nitrogen in the medium in growth of (VINCENT), A., 871.
 phosphorus metabolism of (BODNÁR), A., 439.
 yellow pigments of (KYLIN), A., 1183.
 Sardinian aromatic, essential oils of (PUXEDDU), B., 930.
 detection of acetaldehyde in the respiration of (NEUBERG and GOTTSCHALK), A., 98.
 detection of potassium in (PATSCHOVSKY), A., 209; (LLOYD), A., 1280.
 determination of total nitrogen in (RANKER), A., 1068.
Plant cells, effect of radioactivity on energy and metabolism in (STOKLASA), A., 91.
 structure and disintegration of membranes of (KÖNIG), A., 761.
 membrane equilibria in (W. S. and W. W. BUTKEVITSCH), A., 208.
 elasticity of membranes of (KRASNOSSELSKI-MAXIMOV), A., 326.
 chemistry of membranes of (WOOD), A., 1065.
 geo-electrical effects in (BRAUNER), A., 1105.
 permeability of (MACDOUGAL), A., 1182.
 for dyes (IRWIN; BROOKS), A., 647.
 effect of hydrogen-ion concentration of the nutrient medium on (MEVIUS), B., 1025.
 respiration of (v. SZENT-GYÖRGYI), A., 99.
 action of copper on (COOK), A., 760.
 amylogenous threshold values of various (MAIGE), A., 548.
 labile reserve-protein in (LOEW), A., 871.
Plant diseases, combating of (WACKER, GES. F. ELEKTROCHEM. IND. and KAUFER), (P.), B., 559.
 prevention of, by spraying (RIEDEL, A.-G.; FALCK; BEER), (P.), B., 843.
Plant pests, combating of (CHEM. FABR. SCHERINO, GÖRNITZ, and GOEBEL; FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 209; (ILISCH), (P.), B., 507.
 eradication of (STRICKLER), (P.), B., 559.
Plant plasma, action of alkali and alkaline-earth salts on (KAHO), A., 438.
 effect of salts on the permeability of, to hydrogen and hydroxyl ions (PORT), A., 326, 645.
Plant tissues, electrostatic capacity of (PETRI), A., 679.
 isoelectric points of (ROBBINS and SCOTT), A., 209.
 diffusion of ions in, to protein isoelectric points (PEARSALL and EWING), A., 326.
 swelling and hygroscopicity of (RYWOSCH), A., 326.
 ashing of, with the Hertwig and Bailey method (ROGERS), B., 1026.
Plasma, osmotic pressure of proteins of (FAHR and SWANSON), A., 536.
 uric acid in (JONES), A., 318.
Plaster from overburnt gypsum or anhydrite (BUDNIKOV and LEWIN), (P.), B., 543.
Plaster of Paris (WILSON and RUMFORD CHEMICAL WORKS), (P.), B., 242.
 setting of (NEVILLE), A., 899.
 restoration of, after use (LOVATT and F. M. and E. A. MITCHELL), (P.), B., 1015.
Plastic materials (HOSKINS and ECONOMY FUSE & MANUF. CO.), (P.), B., 14; (RUFF), (P.), B., 709*.
Plastics, vulcanised (LAHEY), (P.), B., 957.
Plasticity (DE WAELE), B., 143, 391.
 of amorphous and crystalline solids (BECKER), A., 230.
Plastilin, behaviour of metals and alloys with (BAUER and ARNDT), B., 327.
Platanolic acid, and its derivatives (ZELLNER), A., 646.
Platanus orientalis (plane), constituents of bark of (ZELLNER), A., 646.
Platinum, native (SHEMTSCHUSHNI), A., 594, 1089.
 rhenium in (ZVJAGINSTSEV, KORSUNSKI, and SELJAKOV), A., 934.
 absorption spectrum of (MEGGERS and LAPORTE), A., 1193.
 arc spectrum of (MCLENNAN and MCLAY), A., 766.
 total brightness of, at the melting point (BRODHUN and HOFFMANN), A., 784.
 effect of temperature on spectral emissivity of (WORTHING), A., 892.
 photo-electric sensitivity of (WOODRUFF), A., 3; (DU BRIDGE), A., 448; (WELO), A., 876.
 thermionic and photoelectric work functions of (HARRISON), A., 552.
 electrical resistance of (MEISSNER), A., 1086.
 bombardment of, with slow electrons (RUDBERG), A., 105.
 Hall effect in films of (PEACOCK), A., 565.
 heated, ions from (ERIKSON), A., 4.
 specific heat of, at low temperatures (SIMON and ZEIDLER), A., 1103.
 adsorption of water vapour on (LENHER), A., 898.
 gels (BENTON), A., 1203.
 valency of, in respect to mercaptans (RÂY, GUHA, and BOSE-RÂY), A., 1023.
 precipitation of, from its salts by hydrogen (IPATIEV and ANDREVSKEI), A., 921.
 assay of (PINTO), B., 829.
 oxide-coated, variation with temperature of the work function of (GLASS), A., 1074.
 pure, refractories for melting (JORDAN, PETERSON, and PHELPS), B., 951.
Platinum alloys (KORSUNSKY), (P.), B., 755.
 with alkaline-earth metals (BOVINO and WESTERN ELECTRIC CO.), (P.), B., 133.
 with ruthenium as catalysts (GES. F. NAUTISCHE INSTRUMENTE and MARTIENSSSEN), (P.), B., 145.
Platinum bases (*platinumammynes*), *cis-trans*-isomerism of (REIHLEN and NESTLE), A., 699.
 bivalent (ROSENHEIM and HÄNDLER), A., 958.
 Hydroxypentamineplatinum carbonate (TSCHUGAEV, CHLOPIN, and FRITZMANN), A., 373.
Platinum compounds, complex, oxidation of (TSCHUGAEV, CHLOPIN, and FRITZMANN), A., 373.
Platinum salts, compounds of carbon monoxide with (MANCHOT), A., 138.
Platinum bromides and iodides (WÖHLER and MÜLLER), A., 259.
Platinous compounds, stereochemistry of (REIHLEN), A., 388.
Platinum organic compounds, with triaminopropane (MANN), A., 1234.
Platinum determination and separation:-
 determination of, in anode slimes (ECKERT), B., 243.
 separation of palladium and (MANCHOT), A., 138.
 separation of rhodium and (WADA and NAKAZONO), A., 141.
Platinum anodes. See under Anodes.
Platinum black, adsorption of gases by (BENTON), A., 1001.
 catalytic hydrogenation with (FAILLEBIN), A., 50.
Platinum foil, rolled, arrangement of micro-crystals in (TANAKA), A., 112.
Platinum metals. See under Metals.
Platinum oxide-platinum black, catalytic action of (HIERS and ADAMS), A., 403.
Pneumococcus, specific substance from, compared with that from Friedländer's bacillus (HEIDELBERGER, GOEBEL, and AVERY), A., 545.

- Pneumonia, blood in (BUCKMAN, ADAMS, SMITH, and EDWARDS), A., 1054.
 lobar, retention of chlorides and increase in organic acids in (HOLTEN), A., 1271.
- Podalirin (CONDORELLI), A., 210.
- Podophyllin, evaluation of (EDER and SCHNEITER), B., 384.
- Poisons, action of, in relation to their physico-chemical condition (BAADE), A., 863.
 adsorption of, on charcoal (DINGEMANSE and LAQUEUR), A., 541.
 cardiac, structure of (JACOBS and HOFFMANN), A., 430.
 for mice, determination of thallium in (MACH and LEPPER), B., 390.
- Poisoning, *rigor mortis* and *post mortem* acid formation in (DE NITO), A., 973.
 acetanilide (YOUNG and WILSON), A., 756; (RENSHAW and ASHCROFT), B., 265.
 aniline (YOUNG, MUEHLBERGER, and MEEK; YOUNG), A., 756.
 arsenic, glycogen content of liver and muscle in (PADERT), A., 756.
 chloroform and phosphorus, metabolism of the liver in (HURTILE), A., 200.
 chloronitrobenzene (RENSHAW and ASHCROFT), B., 265.
 coal gas, resuscitation by lobelin in (DOLLINGER), B., 698.
 copper, chronic (MALLORY), A., 976.
 cyanamide (GLAUBACH), A., 1274.
 hydrocyanic acid (SENSI and REVELLO), A., 1058.
 lead, changes of blood in (SCHMIDT), A., 541.
 cholesterol in (KRETSCHMER and FRIEDER), A., 200.
 nitrogen metabolism in (TSCHERKESS), A., 200.
 industrial, prophylaxis in (MCKAIL), B., 302; (KLEIN), B., 715.
 manganese (HANDOVSKY, SCHULZ, and STAEMMLER), A., 320.
 mercuric chloride, transmineralisation in (STRAUB and GOLLWITZER-MEIER), A., 200.
 blood changes during (LOONEY), A., 1274.
 magnesium hydroxide as antidote for (RAKUZIN), A., 640.
 mercury, in Arabian alchemy (RUSKA), A., 815.
 phloridzin, carbon-nitrogen ratio in (KANAMORI), A., 642.
 sodium fluosilicate (LÜHRIG), A., 928.
- Polar compounds, mechanism of formation of (BRUNETTI), A., 11.
- Polarimeters, temperature control for (CASEY), A., 1118.
- Polarimetry, use of light filters in (SCHULZ), A., 593.
 photo-electric (KENYON), A., 378.
- Polarisation and resistance of electrolytes (HARING), B., 497.
 capacity (BECKER), A., 801.
 surfaces, production of (ZIMMERN and COUTIN), A., 706.
 anodic, oscillographic study of (SEARLE), A., 1106.
 cathodic, surface films on metals during (LIEBREICH), B., 546.
 dielectric, influence of molecular structure on (ERRERA), A., 779.
 of aqueous solutions (EBERT), A., 906.
 in salt solutions (EBERT), A., 796.
 rotation, calculation of Verdet's constant for (DE MALLEMAN), A., 111.
- Polariscopes, substitution of lenses for prisms in (SCHULZ), A., 1021.
- Polarity and optical activity of substituent groups (RULE and SMITH), A., 457.
 in relation to four-membered rings (BURKHARDT, LAPWORTH, and WALKDEN), A., 58.
 theory of alternate, and electron displacement (BERGER), A., 1194.
 of surfaces, measurement of (ADAM, MORRELL, and NORRISH), A., 120.
 electrical, of molecules (RAMAN and KRISHNAN), A., 998.
- Polishing of surfaces (MACAULAY), A., 998.
- Pollucite (KASTLER), A., 709.
- Polonium, effect of sunlight on radioactivity of (MARACINEANU), A., 879.
 amphoteric ionisation of (PANETH), A., 130.
 adsorption and precipitation of (ESCHER-DESRIVIÈRES), A., 879.
- Polyamylases, molecular weight of (PRINGSHEIM and LEIBOWITZ), A., 1128.
- Polyazo-dyes, manufacture of (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 312, 626*.
- Polycyclic compounds, chemistry of, in relation to their homocyclic unsaturated isomerides (BAKER), A., 520; (HASSELL and INGOLD), A., 953.
- Polydatogenol (BRIDEL and BÉGUIN), A., 440.
- Polydatoside (BRIDEL and BÉGUIN), A., 440.
- Polyglycuronic acids (SCHMIDT and VOCKE), A., 939.
- Polygonum cuspidatum*, action of rhamnodiastase on fresh roots of (BRIDEL and BÉGUIN), A., 440.
- Polymerisation (STAUDINGER and BRUSON), A., 719.
 by light (STOBBE and LEHPELDT), A., 64.
 in chemical reactions (BECK), A., 1211.
- Polymethylene compounds, optical constants of (EISENLOHR and GORR), A., 718.
- Polymethylenedicarboxylic acids, and their derivatives (CHUIT), A., 499.
- Polypeptides, desmotropy of (ABDERHALDEN and SCHWAB), A., 740.
 isomerism of 2:5-diketopiperazines and (ABDERHALDEN and SCHWAB), A., 630.
 cleavage of (ABDERHALDEN and BUADZE), A., 544.
 and their derivatives, from glutamic acid (ABDERHALDEN and ROSSNER), A., 603.
- Polypiperidyls, preparation of (RÜLKE and CLOTOWSKI), (P.), B., 464.
- Polyporic acid, constitution of (KÜGL), A., 407.
- Polysaccharides (KARRER, SCHUBERT, and WEHRLI), B., 44; (KARRER and LIESER), B., 267; (KARRER and SCHUBERT), B., 945.
 nomenclature of (BERGMANN), A., 152.
 constitution of (IRVINE and MACDONALD; IRVINE and ROBERTSON), A., 823.
 X-ray structure of (OTT), A., 460.
 synthesis of (SCHLUBACH and RAUCHENBERGER), A., 1127.
 optical rotatory power and structure of (PRINGSHEIM and LEIBOWITZ), A., 275.
 histology of (MEHTA), A., 209.
 fermentation of (GOTTSCHALK), A., 759.
 hydrolysis of, by yeast (IWATSURU), A., 323.
- Pond deposits, bacterial oxidation of sulphur in (FISCHER), B., 71.
- Pongamia glabra*, oil of (BEAL and KATTI), B., 954.
- "Ponkan" fruits, unripe fallen, utilisation of (KAFUKU and HATA), B., 766.
- Poppy, determination of morphine in extracts of (BENNETT and GARRATT), B., 801.
 opium, oil content of seeds of (ANNETT and BOSE), B., 66.
 effect of manures on latex of (ANNETT and SINOH), B., 74.
- Porcelain, researches on (URBSCHAT), B., 361.
 relation between constitution and properties of (RIEKE), B., 541.
 physical properties of (WETZEL), B., 323.
 influence of composition of body and glaze on (LEE), B., 361.
 temperature of, in sunlight (LITTLETON and SHAVER), B., 916.
 translucency of (RIEKE and SAMSON), B., 541.
 fired, discolorations in (HACKELÖER-KÖBBINGHOFF), B., 541.
 glazed, action of gases on (PFAFF), B., 240.
 wet-process electrical, testing and physical properties of (NAVIAS), B., 823.
 for high-tension insulators (REICHAU), B., 158.
 bodies, manufacture of (BECKER), (P.), B., 824.
 substitute (MORIN-KROP), (P.), B., 275.
- Pork, vitamin-A in (HOAGLAND and SNIDER), A., 206.
 soft (ELLIS and HANKINS), A., 197; (ELLIS and ISBELL), A., 972.
- Porosimeter, metal, for highly vitrified ware (NAVIAS), B., 158.
- Porosity of ceramic materials, etc., measurement of (ROBINSON), B., 158.
 determination of (ESSER and PRIVOVARSKI), B., 522.
- Porphyra from cytochrome (SCHUMM), A., 537.
 from yeast and seeds (SCHUMM), A., 758.
- Porphyratins, natural (SCHUMM), A., 751, 968.
- Porphyrins (KÜSTER and MÜLLER; KÜSTER and ZIMMERMANN), A., 748.
 constitution of (PAPENDIECK), A., 631.
 syntheses of (FISCHER and TREIBS; FISCHER and HALBIG), A., 1256; (FISCHER and WALACH; FISCHER and KLARER; FISCHER and ANDERSAG), A., 1261.
 sensitisation of animals by, in respect to light and X-rays (KÄMMERER and WEISBECKER), A., 431.
 artificial and natural, fluorescence of (DHÉRÉ and BOIS), A., 885.
 natural (FISCHER and HILGER), A., 189; (FISCHER, HILMER, LINDER, and PÜTZER), A., 196; (SCHUMM), A., 538, 751, 968; (FISCHER and PÜTZER), A., 854; (FISCHER and SCHWERTTEL), A., 1280.

- Porphyryns**, from blood pigments (PAPENDIECK), A., 312.
 from chlorocruorohæmatin (FOX), A., 193.
 from oxyhæmin anhydride (HAMSK), A., 968.
- Porphyria** (FISCHER, HILMER, LINDER, and PÜTZER), A., 196.
 congenital (MACKAY and GARROD), A., 1169.
- Pots**, resistance of, to glass attack (HYSLOP), B., 745.
- Potash deposits**, German, equilibrium of formation of (FULDA), A., 379.
- Potassium**, intermittent arc spectrum of (NEWMAN), A., 549.
 ionised, spectrum of (DE BRUIN), A., 1070.
 spark spectrum of (DAHMEN), A., 214; (DE BRUIN), A., 874.
 appearance of forbidden spectral lines of (JOOS), A., 106.
 fluorescence of (PRINGSHEIM), A., 992.
 vapour, yellowish-green discharge in (DE BRUIN), A., 1070.
 photo-electric properties of (HORNBECK; LAWRENCE), A., 1073.
 photo-electric ionisation of (MOHLER), A., 877.
 emanation, existence of (KRACKE), A., 655.
 electrical resistance of, at helium temperatures (WOLTJER and ONNES), A., 565.
 heat generated by, in the earth (HOLMES and LAWSON), A., 554.
 specific heat of, at low temperatures (SIMON and ZEIDLER), A., 1103.
 vapour, thermionic phenomena with (KILLIAN), A., 653.
 extraction of, from rocks (CULLEN, HARPER, and U.S. SMELTING, REFINING, & MINING Co.), (P.), B., 744.
 availability of, in soils (HALEY), B., 102.
- Potassium alloys** with mercury, vapour pressure of (POINDEXTER), A., 897.
- Potassium compounds** from leucite (S.I.P. Soc. ITAL. POTASSA), (P.), B., 487; (GIORDANI and POMILIO), (P.), B., 538.
- Potassium salts**, manufacture of (NICCOLI), (P.), B., 360*.
 from sea-water (NICCOLI), (P.), B., 237.
 crude, treatment of (PARFÉE), B., 437.
 utilisation of end liquors from (WOLFF & Co. and FROWEIN), (P.), B., 322.
 properties of (HACKSPILL and GRANDADAM), A., 569.
 antagonism of, to X-rays and radium (NADSON and ŽOLKEVIČ), A., 91.
 solubility of, in soils (ENGELS), B., 641.
 effect of, in animal nutrition (MILLER), A., 1273.
- Potassium bromide**, reflexion of Röntgen rays by crystals of (DUANE), A., 446; (ALLISON), A., 447.
 dissociation of water in (HARNED and JAMES), A., 907.
 equilibrium of the action of gaseous hydrogen chloride on (JELLINEK and IRELSOHN), A., 909.
 equilibrium of silver bromide, water, and (LAMBERT), A., 799.
 bromide, chloride, and iodide, transport numbers of anions of (LORENZ and WESTENBERGER), A., 1008.
 carbonate, preparation of (KLOPSTOCK and NEUMANN), (P.), B., 53*.
 chlorate, catalytic decomposition of (BURROWS and BROWN; ROGINSKI and SCHULZ; BELENKI), A., 916; (PISARSHEVSKI), A., 917; (BROWN and WHITE), A., 1011.
 analysis of (LEHN and FRNK), B., 87.
 chloride, transference numbers and ionic conductivities in (LORENZ and WESTENBERGER), A., 360.
 electrical conductivity of, in water and in acetone-water mixtures (BROWNSON and CRAY), A., 246.
 equilibria of ammonium and mercuric chlorides, water, and (OSAKA and ANDO), A., 26.
 equilibrium of barium and magnesium chlorides with (VALENTIN), B., 634.
 equilibrium of potassium oxalate, water, and (TRIFONOV), A., 246.
 recovery of, from brine (SILSBEE), (P.), B., 788.
 chloride and iodide, conductivity of ions of (LORENZ and WESTENBERGER), A., 910.
 chromate and sulphate, equilibria of, with ammonium chromate and sulphate (ISHIKAWA), A., 1102.
 dichromate, photochemical oxidations in presence of (PLOTNIKOV; SCHWARZ), A., 253.
 catalytic decomposition of hydrogen peroxide by, in presence of cobalt salts (ROBERTSON), A., 917.
 aluminium fluoride (WEINLAND, LANG, and FIKENTSCHER), A., 136.
 magnesium fluoride, crystal structure of (VAN ARKEL), A., 460.
 halides, spectrography of (JOB), A., 571, 791.
 viscosity and density of methyl alcohol solutions of (EWART and RAIKES), A., 1000.
- Potassium halides**, solubility of, in alcohol-water mixtures (ZEITLIN), A., 671; (BRODSKY), A., 672.
 equilibria of lead halides, water, and (BURRAGE), A., 908.
 hydroxide (*caustic potash*), pure, electrolytic preparation of, from crude potash (VERNITZ), B., 873.
 manufacture of, from crude potassium salts (ALLINGER), (P.), B., 788.
 electrical conductivity and viscosity of (ARNDT and PLOETZ), A., 801.
 stirring apparatus for analysis of (MÜLLER), A., 1021.
 separation of, from sodium hydroxide (SOC. CHEM. IND. IN BASLE), (P.), B., 53*.
 metaperiodate, crystal structure of (HYLLERAAS), A., 1194.
 iodide, absorption spectrum and dissociation of (BRODE), A., 882.
 electrical conductivity of iodo-bromine solutions of (PLOTNIKOV), A., 579.
 influence of iodine on the conductivity of aqueous solutions of (BRUNS), A., 128.
 equilibrium of mercuric iodide, acetone, and (PERNOT), A., 695.
 action of paracetaldehyde on (HAUSSEN), A., 1226.
 permanganate, analytical control in manufacture of (WALDE and SCHUCH), B., 319.
 absorption spectrum of (ADINOLFI), A., 659.
 reduction of, with ethylene (STEOPOE), A., 676.
 action of hydrogen sulphide on neutral solutions of (DUNNICLIFF and NJHAWAN), A., 256.
 oxidation of oxalic acid with (SCHEFF), A., 48.
 standardisation of, with thiosulphate (SCHRÖDER), A., 705.
 nitrate, formation of, and its reduction to cyanide (HOFMANN, LINNMANN, GALOTTI, HAGENEST, and HOFMANN), A., 370.
 manufacture of (WOLFF & Co. and HAMPEL), (P.), B., 321.
 equilibrium of ammonium nitrate, water, and (ANDO), A., 26.
 equilibrium of, with barium and lead nitrates and water (GLASSTONE and RIGGS), A., 126.
 equilibrium of potassium sulphate, water, and (INOUE), A., 26.
 nitrate and sulphate, equilibria of, with water and ammonium nitrate and sulphate (OSAKA and INOUE), A., 126.
 equilibria of, in systems with sodium nitrate and sulphate (HAMID), A., 245, 246.
 trinitride, crystal structure of (HENDRICKS and PAULING), A., 113.
 oxides (KRAUS and WHYTE), A., 921.
 phosphate, production of phosphoric acid and (ROSS, JONES, and MEHRING), (P.), B., 946.
 double phosphites and pyrophosphates (ROSENHEIM, FROMMER, GLÄSER, and HÄNDLER), A., 696.
 pentachlororuthenate, hydrolysis of (FREUNDLICH and PARIS), A., 1097.
 polyselenide and polysulphide (BERGSTROM), A., 256.
 silicates, complex, preparation of fertilisers from (ORMANDY and PEAKE), (P.), B., 52.
 ammoniostannite (BERGSTROM), A., 254.
 sulphate, solubility of (MACHELEDT), A., 466.
 equilibria of, with water and manganese, nickel, and zinc sulphates (CAVEN and JOHNSTON), A., 1210.
 equilibrium of potassium nitrate, water, and (INOUE), A., 26.
 cerous sulphates (ZAMBONINI and RESTAINO), A., 1015.
 hydrogen sulphite, solubility of (PLATT and HUDSON), B., 1012.
 permonosulphate (*Caro's reagent*) (VALLANCE), B., 318.
 alum, rhythmic crystallisation of (HRYNAKOWSKI), A., 897.
 pentasulphide (DRAVES and TARTAR), A., 809.
 sulphite, hydrogen sulphite, and metabisulphite, manufacture of (HENE), (P.), B., 487.
- Potassium detection and determination** :—
 sodium ferrocyanide reaction for (GASPAR Y ARNAL), A., 591.
 detection of, microchemically, in plants (PATSONOVSKY), A., 209.
 determination of (DELAVILLE and CARLIER; WIKUL; LE BOUCHER), A., 491; (HAMID), A., 1019.
 determination of, by means of the perchlorate method (YOE), A., 261.
 determination of, volumetrically, as hydrogen tartrate (MEURICE), A., 702.
 determination of, in biological media (DELAVILLE and CARLIER), A., 1068.
 determination of, in mixed fertilisers (THORPE), B., 601.
 determination of available, in soils, by Neubauer's method (HÄHNE), B., 1023.

- Potassium arc, absorption of hydrogen in (RUSK), A., 249.
- Potatoes, effect of soil reaction on (TRENEL), B., 416.
manuring of (HUXDORFF), B., 71; (LAMBERG), B., 959.
souring of (GLAUBITZ), B., 510.
oxidation in cells of (v. SZENT-GYÖRGYI), A., 99.
moisture and nitrogen content of, during growth and storage (FAGAN), B., 846.
formation of sucrose in drying of (DE WOLFF), A., 1183.
tubers of, in leaf-roll disease (MCLEAN), A., 762.
- Potato starch, sweet, in cornflour and arrowroot (STUBBS), B., 800.
- Potato wart, elimination of, from soil (HUNT, O'DONNELL, and MARSHALL), B., 168.
- Potential, hydration and adsorption in the production of (ISCARISCHEV), A., 802.
influence of X-rays on bioelectric differences of (LIECHT), A., 804.
of surfaces of electrolytes relative to that of water (GARRISON), A., 130.
at liquid junctions (VOSNESSENSKI), A., 30; (VOSNESSENSKI and ASTACHOV), A., 129; (CARTER and LEA), A., 688.
elimination of (ATEN and VAN DALFSEN), A., 361.
at absolute zero, determination of (BENNEWITZ and SCHULZ), A., 1212.
decomposition of metallic chlorides in anhydrous pyridine (MASON and MATTHEWS), A., 31.
reduction-oxidation (HERSCH and RÜTER), A., 930.
streaming (LACHS and KRONMAN), A., 803.
- Potentiometer for hydrogen-ion measurements (SHOJI), A., 1115.
deflexion (BIENFAIT), A., 260.
- Potter's slip, sifting of (HARRISON), (P.), B., 323*.
- Pottery, manufacture of (MELLOR), (P.), B., 667; (VARCOE), (P.), B., 824.
saggers and setters for firing (BENNION and CLARKE), (P.), B., 747.
spalling of (NORTON), B., 1014.
decoration of (LOVATT & LOVATT and LOVATT), (P.), B., 129.
from ancient "oppidum" of Vindalium (DESVERGNES), B., 323.
- Poultry, digestibility trials with (HALNAN), B., 896.
vitamin-A in flesh and fat of (HOAGLAND and LEE), B., 846.
- Powders, sintering of, without fusion (HEDVALL), A., 1093.
sparingly soluble, influence of dissolved electrolytes on the electrical charge of (HAYASHI), A., 904.
weight of, in air and in vacua (RUEK and KUSCHMANN), A., 1089.
- packing of (PONTOPPIDAN), (P.), B., 1000.
colloidal, combustion of (MURAUOR), B., 722, 854.
fine, production of (PODSZUS), (P.), B., 256*.
apparatus for separation of grit and coarse particles from (GALLIE and PORRITT), B., 935.
- flameless propellant (FRANKLIN), (P.), B., 612.
- porous, used in electric cells, rendering of, impermeable to liquids (OPPENHEIM and SOC. ANON. LE CARBONE), (P.), B., 677.
- smokeless, manufacture of (TAYLOR and TAYLOR LABORATORIES), (P.), B., 854.
drying of (VICKERY and DAVIS), (P.), B., 517.
removal of colouring matter from (PITMAN, HUNTER, and DU PONT DE NEMOURS & Co.), (P.), B., 468.
deflagration products of (KNIGHT and WALTON), B., 388.
apparatus for routine testing of stability of (MEERSCHERDT-HÜLLESSEMER), B., 933.
determination of the relative surface areas of (KOEHLER), B., 903.
- Powellite, crystal structure of (VEGARD), A., 663.
- Power generation, utilisation of diphenyl oxide in (DOW), B., 855.
- Power plants, utilising caustic potash, caustic soda, or soda (KOENEMANN), (P.), B., 904.
- Praseodymium, ultra-violet spectrum of (GARDINER), A., 774.
adsorption of hydrogen by (SIEVERTS and ROELL), A., 356.
- Praseodymium double nitrates with bivalent metals, solubility of (PRANDTL and DUCRUE), A., 345.
sesquioxide, crystal structure of (ZACHARIASEN), A., 1195.
oxides (PRANDTL and HULTNER), A., 137.
- Precipitates, structure of (ODÉN), A., 678.
with stratified structure (UNGERER), A., 904.
determination of size distribution of particles in (WERNER), B., 31, 336*.
adsorption of dissolved substances by (CHARRIOT), A., 1200.
- Precipitates, influence of adsorption on colour of (DHAR), A., 24.
apparatus for washing (HADJIEV), A., 815.
insoluble, adsorption by (HÜTTIG and MENZEL), A., 900.
- Precipitation, apparatus for filtration and (MILLS and CROWE), (P.), B., 112.
of solids (LAMBERT and HUME-ROTHIER; LAMBERT and SCHAEFFER), A., 1209.
of small quantities of substances in relation to the radioactive precipitation rule (HAHN, ERBACHER, and FEICHTINGER), A., 1092.
fractional (RUFF and HIRSCH), A., 126, 345.
rhythmic (JABLONZYŃSKI and KOBRYNER), A., 473.
- Precipitators, electrical. See under Electrical.
- Pregnancy, interferometric application of the Abderhalden reaction for (KAUFMANN), A., 1268.
kctosis in (HARDING and ALLIN), A., 972.
amino-acids and polypeptides in blood in (SCHLOSSMANN), A., 860.
distribution and metabolism of cholesterol and phosphatides in (BAUMANN and HOLLY), A., 429.
bile acids in blood and urine in (KLEESATTEL), A., 1169.
gastric juice in (NAKAI), A., 1052.
lipase in blood in (CLAUSER), A., 94.
effect of, on lipins of blood (TYLER and UNDERHILL), A., 199.
excretion by kidneys in (YAMADA), A., 859.
- Preheaters (ILLINGWORTH and ILLINGWORTH CARBONIZATION Co.), (P.), B., 146.
- Preservatives, manufacture of (TRACHSEL), (P.), B., 203.
for foods (SABALITSCHKA), (P.), B., 383.
- Preserves and their containers, determination of tin and lead in (OWE), B., 606.
- Pressure, charts for temperature and (CALINGAERT and DAVIS), A., 142.
relation between temperature, density, and (PICKERING), A., 569.
internal, history of (RICHARDS), A., 143.
partial, deviations from the law of (TRAUTZ and EMERT), A., 343.
- Pressure regulator, automatic (DAWSON), A., 41.
vacuum (SCOFIELD), A., 932.
- Priming compositions (LES PETIT-FILS DE WENDEL & Co.), (P.), B., 966.
- Primula, crystalline saponin from (KOPLER and ROSENZWEIG), (P.), B., 964.
- o-Primuline, preparation of (YAMADA), A., 850.
- Primuline derivatives, affinity of, for cotton (RUGGLI and PESTALOZZI), B., 436.
- Printing, colloid chemistry and (TREICHEL), B., 189.
use of potassium salts in (SIEBER), B., 819.
resists for use in (CLARKE and BROWN), (P.), B., 357.
of cellulose acetate (BRITISH CELANESE, ELLIS, and GOLDTHORPE), (P.), B., 50, 87, 124; (BRITISH CELANESE, ELLIS, and GREENHALGH), (P.), B., 124.
of coloured reserves on coloured grounds with basic dyes (SCHEURER; MANGOLD), B., 581.
of dado effects in colours (KOECHLIN FRÈRES; BINDER), B., 580.
of fabrics (DREYFUS and AMER. CELLULOSE & CHEM. MANUF. Co.), (P.), B., 706.
preventing rapid decomposition of ice colours in (WINTERNITZ; WAGNER), B., 581.
of imitation embroidery or plaited effects on textiles (FROSSARD, REBERT, and LOTHAREFF; WAGNER), B., 581.
of coloured discharges on indigo by means of vat-dyes (SUNDER and SOLBACH; MICHEL), B., 402.
of white and red discharges on indigo (SEYDER), B., 437; (POKORNY), B., 437, 662.
of nitrophenol dyes on fabrics (WENGRAF), B., 706.
of white and multicolour effects on fabrics dyed with sulphur dyes (SCHEUNERT and FROSSARD; ZUNDEL and VOGT), B., 49.
of textiles (GEIGY), (P.), B., 124; (DURAND & HUGUENIN, BADER, LOMBARD, SUNDER, and VAUCHER), (P.), B., 318*; (KNECHT and MULLER), (P.), B., 357.
use of "aktivin" in (WEGENER), B., 662.
with vat dyes, use of sodium silicate in (LA MANUF. ZUNDEL and LANTZ; BINDER), B., 86.
of woollen piece goods with direct dyes (FAVRE; WAGNER), B., 122.
- Printing colours or ink, manufacture of (CAJAK), (P.), B., 333*.
- Printing pastes, discharge, containing caustic soda (SIEBER), B., 820.
reserve, from algin (KUNIG), B., 784.
stable vat dye (FARB. v. BAYER & Co.), (P.), B., 235.
- Printing rollers, alloy for (WALRATH), (P.), B., 884.

- Privet. See *Lingustrum vulgare*.
- Producers. See under Gas producers.
- Proline (ABDERHALDEN and SICKEL), A., 630.
dissociation constants of (McCAY and SCHMIDT), A., 354.
- Prolyl-leucine anhydride (ABDERHALDEN and SICKEL), A., 1235.
- "Promoloid asahi." See "Asahi promoloid."
- Promoters, action of, in catalysis (ROBERTSON), A., 917.
effect of, on catalytic oxidation by charcoal (RIDEAL and WRIGHT), A., 919.
- n*-Propaldehyde 2:4-dinitrophenylhydrazon (BRADY and ELSMIE), A., 394.
- Propaldehyde, $\alpha\beta$ -trichloro-, α -chloro- $\alpha\beta$ -dibromo-, and $\alpha\beta$ -dichloro- α -bromo- (BERLANDE), A., 47.
- Propane, $\alpha\beta\gamma$ -tri-amino-, metallic complexes of, and its dihydrochloride hydriodide (MANN and POPE), A., 1233; (MANN), A., 1234.
l- α -bromo- β -hydroxy-, and *l*- α -cyano- β -hydroxy- (LEVENE and WALT), A., 937.
 $\alpha\beta$ -dihydroxy-, conversion of optically active lactic acid into (LEVENE and HALLER), A., 597.
- cycloPropane-1:2-dicarboxylic acid, 1-bromo-, methyl ester, and 1-iodo- (ING and PERKIN), A., 48.
- Propane- $\beta\gamma$ -diolsulphuric acid, α -chloro-, barium salt (ZETTSCHKE and AESCHLIMANN), A., 1225.
- Propane- $\beta\beta$ -disulphonic acid, phenyl ester, action of sodium or barium hydroxide on (SCHROETER), A., 1226.
- Propane- $\alpha\alpha\beta$ -tricarboxylic acid, derivatives of (KOHLE and BUTLER), A., 713.
- Propan- β -ol, α -hydroxylamino-, oxalate (SCHMIDT, ASCHERL, and MAYER), A., 45.
- Propargyl bromide (v. BRAUN, KÜHN, and SIDDIQUI), A., 851.
preparation of (KIRKMAN), A., 710.
- Propargylmorphine, and its derivatives (v. BRAUN, KÜHN, and SIDDIQUI), A., 851.
- p*-Propenylbenzene semicarbazone (QUELET), A., 720.
- 6-*n*-Propenylphenol, 2:4-dichloro-, and its allyl ether (CLAISEN and TIETZE), A., 1035.
- 3-*iso*-Propenylpyridine, and its salts (OPARINA), A., 844.
- 5-Propenyl-*m*-4-xylenol, and its derivatives (CLAISEN and TIETZE), A., 1035.
- 5-Propenyl-*m*-4-xylyl allyl ether (CLAISEN and TIETZE), A., 1035.
- Prophydroxamic acid, α -hydroxy-, ethyl ester (HOUBEN and PFANKUCH), A., 1237.
- Propionic acid, α -hydroxy-, and β -chloro- α -hydroxy-, and its acetyl derivative, ethyl esters of (HOUBEN and PFANKUCH), A., 1237.
- Propionic acid, and its salts and derivatives (STRAUS and VOSS), A., 1124.
- Propiol-*p*-phenetidine (STRAUS and VOSS), A., 1124.
- Propionic acid, barium salt, solubility of (WING and THOMPSON), A., 236.
complex ferric salts of (WEINLAND and HÖRN), A., 711.
p-chlorophenyl ester (WITTIG, BANGERT, and RICHTER), A., 301.
p-cumyl ester (BERT), A., 285.
- Propionic acid, β -amino-, benzoyl derivative, conversion of, into a 1:3-oxazine (KARRER and MIYAMICHI), A., 530.
 α -bromo-, velocity of hydrolysis of (ZAWIDZKI), A., 914.
 $\alpha\beta\beta$ -tribromo-, α -chloro- $\alpha\beta$ -dibromo-, $\alpha\beta$ -dichloro- α -bromo-, and $\alpha\alpha\beta$ -trichloro-, and their salts and derivatives (BERLANDE), A., 47.
 α -iodo-, resolution of, and its salts and derivatives (HANNERZ), A., 936.
- d*-Propionic acid, $\alpha\beta$ -diamino-, and β -chloro- α -amino-, benzoyl derivative, methyl esters (KARRER, ESCHER, and WIDMER), A., 505.
- Propionitrile, β -chloro- α -hydroxy-, and its acetyl derivative (HOUBEN and PFANKUCH), A., 1237.
- Propionylarsanilic acid, α -bromo- (GIEMSA and TROFF), A., 1162.
- Propionyl- α -benzilmmonoxime (MEISENHEIMER, ZIMMERMANN, and v. KUMMER), A., 406.
- 3-Propionyl-2:6-dimethylbenzo-1:4-pyrone (WITTIG, BANGERT, and RICHTER), A., 301.
- 3-Propionyl-2:4-dimethylpyrrole (FISCHER and SCHUBERT), A., 737.
- 3-Propionyl-2:4-dimethylpyrrole-5-carboxylic acid, and its ethyl ester (FISCHER and SCHUBERT), A., 737.
- 5-Propionyl-2-ethylpyridine, and its derivatives (BENARY), A., 1227.
- Propionylguanidine picrate (ANDREASCH), A., 819.
- Propionylguanidine, α -bromo-, and its bromoplatinate (ANDREASCH), A., 277.
- 2-Propionyl-5-methyl-3-ethylpyrrole-4-carboxylic acid, (KÜSTER, ERFLE, v. ROLL, and SCHILLER), A., 822.
- 5-Propionyl-2-methyl-4-ethylpyrrole-3-carboxylic acid, ethyl ester (FISCHER and KLARER), A., 1261.
- 2-Propionyl-naphthalene-4-sulphonic acid, 1-hydroxy-, and its azine (FRIES and SCHIMMELSCHEIDT), A., 294.
- Propionyl-*p*-phenetidine (HILL and RABINOWITZ), A., 517.
- 2-Propionylphenol, 4-chloro- (WITTIG, BANGERT, and RICHTER), A., 301.
- Propionylsarcosine, bromo- (LEVENE, SIMMS, and PFALTZ), A., 1265.
- 4-Propionyl-2:3:5-trimethylpyrrole (FISCHER and SCHUBERT), A., 737.
- Propiophenone (*phenyl propyl ketone*), determination of, and its 2:4-dinitrophenylhydrazon (MEISENHEIMER), A., 68.
- Propiophenoneglycerol (ALTWEGG, CHERMETTE, and Soc. CHIM. USINES DU RHÔNE), (P.), B., 463.
- Propional, distinction between veronal, luminal, and (EKKERT), B., 802.
- p*-*iso*Propoxyacetophenone (BRADLEY and ROBINSON), A., 1145.
- 4-Propoxyanisole, nitro-derivatives (ROBINSON and SMITH), A., 397.
- 2-Propoxyanisoles, nitro-derivatives (ALLAN and ROBINSON), A., 396.
- p*-Propoxybenzhydramine, and its hydrochloride (TORRÈS y GONZALEZ), A., 396, 609.
- p*-*iso*Propoxybenzoic acid, and its ethyl ester (BRADLEY and ROBINSON), A., 1145.
- p*-Propoxybenzophenone, and its oxime (TORRÈS y GONZALEZ), A., 396, 609.
- ω -*p*-*iso*Propoxybenzoylacetophenone, and its copper derivative (BRADLEY and ROBINSON), A., 1145.
- 2-Propoxybenzyl propyl ether, 5-nitro- (KLIEGL, HÖLLE, and BALZ), A., 720.
- 4-Propoxybenzyl bromide, 3-nitro- (KLIEGL, HÖLLE, and BALZ), A., 720.
- 2-Propoxycyclohexyl bromide (BEDOS), A., 1238.
- 5-Propoxymethylbarbituric acid (HILL and KEACH), A., 271.
- 5-Propoxymethyl-5-ethylbarbituric acid (HILL and KEACH), A., 271.
- Propoxymethylmalonic acid, ethyl ester (HILL and KEACH), A., 271.
- Propyl alcohol, absolute, manufacture of (STEFFENS and U.S. INDUSTRIAL ALCOHOL Co.), (P.), B., 299.
viscosity of, at low temperatures (MIZUSHIMA), A., 1082.
- iso*Propyl alcohol, purification of (WILKIE and U.S. INDUSTRIAL ALCOHOL Co.), (P.), B., 609; (MANN, LERO, and HUNT), (P.), B., 610.
heat of mixing of, with water (SANDONNINI), A., 1008.
deodorisation of (JOHNS and STANDARD DEVELOPMENT Co.), (P.), B., 898.
- Propyl barium phosphates, γ -bromo- and γ -iodo- β -hydroxy- (ZETTSCHKE and NACHMANN), A., 46.
 γ -chloropropyl sulphide, γ -thiol-, and its benzoate (ROJAHN and LEMME), A., 145.
ethers, β -chloro- and $\beta\beta'$ -dichloro- (DEWAELE), A., 383.
mercaptals of sugars (UYEDA and MAEDA), A., 1125.
mercaptan, γ -hydroxy-, and its benzoate (ROJAHN and LEMME), A., 145.
*iso*propyl sulphide (v. BRAUN and MURJAHN), A., 829.
disulphide, $\gamma\gamma$ -dihydroxy-, and its benzoate (ROJAHN and LEMME), A., 145.
- iso*Propyl selenides (NATTA), A., 1023.
- 2-*n*-Propylacetamido-1:6:8-trinitronaphthalene (VAN DER KAM), A., 1240.
- cycloPropylacetoneitrile, and its benzoyl derivative (v. BRAUN, KÜHN, and SIDDIQUI), A., 851.
- p*-*N*-Propylaminobenzoic acid, β -diethylaminoethyl, γ -diethylaminopropyl, and β -piperidinoethyl esters (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 107.
- 2-Propylamino-1:6:8-trinitronaphthalenes (VAN DER KAM), A., 1240.
- 2-Propylamino-1:2:3:4-tetrahydronaphthalene, γ -amino-, and its salts (v. BRAUN, GOLL, and METZ), A., 1232.

- 9-*iso*Propylanthracene, and 10-bromo-, and its tetrabromide, and 2:3:10-*tribromo*- (BARNETT and MATTHEWS), A., 1030.
- Propylbenzene, β -*dibromo*- (HUSTON and SAYER), A., 944.
- 3:4:5-*trihydroxy*-(*hydroxyditarinol*), synthesis of (MAUTHNER), A., 516.
- N-n*-Propyl-*o*-benzoisulphinide (McCLELLAND and GAIT), A., 743.
- 2-*iso*Propyl-1:3-benzoxazone (MOUCKA and RÖGL), A., 626.
- 5-*iso*Propyl-2-*isobutyl*pyridine, acetyl derivative and 3:5-*dinitro*- (OPARINA), A., 844.
- iso*Propylcarbamide, α -cyano- (BILTZ and SLOTTA), A., 1046.
- 9-*iso*Propylcarbazole, 3-iodo- (TUCKER), A., 622.
- β -*n*- and *iso*-Propylcinnamic acids, and their derivatives (JOHNSON and KON), A., 1246.
- Propyl- $\beta\beta$ -dicarbethoxydiethylamines (McELVAIN), A., 1044.
- Propylene, preparation of (BONHAM), A., 1022.
- dry, action of hydrogen chloride on (MAASS and SIVERTZ), A., 131.
- narcotic action of (HALSEY, REYNOLDS, and PROUT), A., 320.
- Propylene, α -*dibromo*-, action of magnesium organic compounds on (KIRRMANN), A., 817.
- Propylene-ethylenethiohydrin, preparation of (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 218*.
- Propylene glycol, configuration of β -hydroxybutyric acid and (LEVENE and WALT), A., 937.
- α -Propylene glycols, isomeric (DEUSSEN), A., 1252.
- Propylene oxides, manufacture of (BURDICK and CARBIDE & CARBON CHEMICALS CORP.), (P.), B., 692*.
- Propylenethiohydrin, preparation of (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 218*.
- β -*cyclo*Propylethyl bromide (v. BRAUN, KÜHN, and SIDDIQUI), A., 851.
- iso*Propylethylcarbamide, α -cyano- (BILTZ and SLOTTA), A., 1046.
- β -*cyclo*Propylethylmorphine, and its hydrochloride (v. BRAUN, KÜHN, and SIDDIQUI), A., 851.
- Propyl- γ -*cyclo*geraniolene (ESOURROU), A., 1238.
- 2-Propyl- Δ^1 -*cyclo*hexenylacetone semicarbazone (KON and SMITH), A., 952.
- Propylhydrazine, β -*di*hydroxy-, and its salts (FREUDENBERG and HESS), A., 935.
- 5-Propyl-5- β -hydroxyethylbarbituric acid (CRETCHER, KOCH, and PITTENGER), A., 180.
- n*-Propyl- β -hydroxyvinyl ketone (BENARY, MEYER, and CHARISIUS), A., 273.
- iso*Propylidene compounds of sugars (OHLE, KOLLER, and BEREND; OHLE and BEREND), A., 150; (OHLE and DICKHÄUSER), A., 151.
- di- γ -ethoxypropyl disulphide (ROJAHN and LEMME), A., 145.
- di- γ -hydroxypropyl disulphide, and its dibenzoate (ROJAHN and LEMME), A., 145.
- Propylideneacetone. See Δ^7 -Hexen- β -one.
- iso*Propylidenedioxy-groups, determination of (GRÜN and LIM-RÄCHER), A., 632.
- β -*iso*Propylidenedioxypropylhydrazine, and its phenylcarbimide derivative (FREUDENBERG and HESS), A., 935.
- Propylidenedi-2-pyridyldiamine (SCHMID and BECKER), A., 845.
- N-iso*Propyl-*N*-methylcarbamide, α -cyano- (BILTZ and SLOTTA), A., 1046.
- cyclo*Propylmethylmorphine, and its salts (v. BRAUN, KÜHN, and SIDDIQUI), A., 851.
- N*-Propylnicotone (KARRER and TAKAHASHI), A., 627.
- p-iso*Propylphenylacetaldehyde, and its semicarbazone (BERT), A., 285.
- p-n*-Propylphenyl β -anilino- β -phenylethyl ketone (WEYGAND and MATTHIES), A., 1248.
- Propylphenylcarbazinic acid, γ -hydroxy-, lactone (DOX), A., 963.
- β -*p-iso*Propylphenylethyl alcohol, and its acetate (BERT), A., 57.
- p-n*-Propylphenyl styryl ketone (WEYGAND and MATTHIES), A., 1041.
- Propylphthalimide, γ -chloro- β -hydroxy-, and β -hydroxy- γ -cyano-, and their derivatives (TOMITA), A., 1129.
- iso*Propylpropylbarbituric acid, additive compound of, with 4-dimethylamino-1-phenyl-2:3-dimethyl-5-pyrazolone (PFEIFFER), (P.), B., 172.
- Propylpropionylacetones (MORGAN), A., 188.
- β -*n*-Propylpulegone, constitution of (GRIGNARD and SAVERD), A., 72.
- 3-*iso*Propylpyridine, and its salts (OPARINA), A., 844.
- 3-*p*-Propylpyridine-2:5-dicarboxylic acid, and 3-hydroxy-, lactone (OPARINA), A., 844.
- 1-Propylpyridinium iodide (MAGIDSON and MENSCHIKOV), A., 844.
- tetrabromo- and tetraiodo-thallates (KRAUSE and v. GROSSE), A., 1112.
- iso*Propylselenol (NATTA), A., 1023.
- Propyl- Δ^6 -tetrahydrophthalide (BERLINGOZZI and MAZZA), A., 835.
- Propylthiazanes, and their dioxides and hydrochlorides (LAWSON and REID), A., 80.
- Propyl-1:2:4-triazoles, amino-, and their derivatives (REILLY and DRUMM), A., 961.
- 3-Propyl-1:2:4-triazoles, 5-chloro- (REILLY and DRUMM), A., 962.
- 3-Propyl-1:2:4-triazole-5-azooacetacetic acids, ethyl esters (REILLY and DRUMM), A., 962.
- 3-Propyl-1:2:4-triazole-5-azocetylacetones (REILLY and DRUMM), A., 962.
- 3-*iso*Propyl-1:2:4-triazole-5-azo- β -naphthol (REILLY and DRUMM), A., 962.
- 3-Propyl-1:2:4-triazole-5-azo- β -naphthylamines (REILLY and DRUMM), A., 962.
- 3-Propyl-1:2:4-triazole-5-*isodiazohydroxides* (REILLY and DRUMM), A., 962.
- 3-*n*-Propyl-1:2:4-triazolyl-5-hydrazine, and its benzaldehyde-hydrazone (REILLY and DRUMM), A., 962.
- 4-*iso*Propyl- $\alpha\beta$ -triphenylpropane, 2:2':4:4':6:6'-*hexanitro*- (PASTAK), A., 392.
- 8-Propylundecane-8-*diol* (NICOLLE), A., 383.
- 2-Propylvaleric acid, thallous salt (WALTER), A., 712.
- Propyl vinyl ketone, and its picate (DELABY), A., 272.
- Propyl- β -vinylxyethylmalonic acid, diethyl ester (CRETCHER, KOCH, and PITTENGER), A., 180.
- iso*Propylxanthinol, and its derivatives (CONANT, SMALL, and SLOAN), A., 842.
- 5-*n*-Propyl-*m*-4-xylene, and its phenylurethane (CLAISEN and TIETZE), A., 1035.
- Proteases, buffers for study of (SMORODINCEV and ADOVA), A., 94, 202.
- of urine (PECZENIK and KAWAHARA), A., 1275.
- animal, specificity of (WALDSCHMIDT-LEITZ and HARTENECK), A., 323; (WALDSCHMIDT-LEITZ and SIMONS), A., 1060; (FELIX and WALDSCHMIDT-LEITZ), A., 1278.
- in plants (WILLSTÄTTER, GRASSMANN, and AMBROS), A., 433, 543; (BLAGOVESTSCHENSKI), A., 434.
- Proteins (LOEW), A., 439; (LINDERSTROM-LANG and LUND), A., 1101.
- constitution of (BRIGL and HELD), A., 630.
- structure of (ABDERHALDEN and SCHWAB), A., 83, 1259; (ABDERHALDEN and HAAS; ABDERHALDEN and QUAST), A., 312.
- structure and hydrolysis of (HUNTER), A., 1265.
- preparation of, at low temperatures (PARSONS), A., 643.
- properties of (ANSON and MIRSKY), A., 189.
- effect of exposure to the mercury vapour lamp on (STEDMAN and MENDEL), A., 966.
- physical properties of (ABDERHALDEN and HAAS), A., 959, 960.
- photo-oxidation of (HARRIS), A., 635.
- electrical resistance of acid and alkaline solutions of (FISCHER and HOOKER), A., 1097.
- mobility of (SVEDBERG and TISELIUS), A., 1104.
- isoelectric points of (CSONKA, MURPHY, and JONES), A., 534.
- action of ethyl alcohol on sensitivity of, to electrolytes (WELO), A., 1058.
- molecular weight of (SVEDBERG and FAHRAEUS), A., 340.
- in phenol (COHN and CONANT), A., 891.
- solubility of, in fat solvents (DEUTSCH), A., 672.
- liberation of adsorbed substances on (ROSENTHAL), A., 1165.
- adsorption of methylene-blue hydrochloride by (FODOR and MAYER), A., 1091.
- combination of, with rose-Bengal (ROSENTHAL; ROSENTHAL and ACKMAN), A., 1271.
- rate of filtration of solutions of (AMBERG and SAWYER), A., 1205.
- kinetics of denaturation of (LEWIS), A., 1204.
- specific dynamic action of (TERROINE and BONNET), A., 639.
- spreading of, on water (GORTER and GRENDAL), A., 1094.
- coagulation of (FREUND and LUSTIG), A., 354.
- in drops (REINER, PLUHÁČ, and HÁNYŠ), A., 751.
- coagulation and swelling of, with organic acids (ISGARISHEV and BOGOMOLOVA; ISGARISHEV and POMERANZEVA), A., 472.
- precipitation of (WUNSCHENDORFF), A., 211, 762; (MAILLARD and WUNSCHENDORFF), A., 762.

- Proteins, precipitation of, with alums** (MAILLARD and WUNSCHENDORFF), A., 189.
 binding of acids and alkalis by (GORTNER and HOFFMAN), A., 631.
 action of superheated water on (KOMATSU and OKINAKA), A., 853, 1163.
 hydrolysis of (SCHRYVER and BUSTON), A., 749, 1049.
 electrical separation of amino-acids from hydrolysis products of (FOSTER and SCHMIDT), A., 802.
 rate of oxidation of the hydrolytic products of, with a view to analysis (BOTSTIBER), A., 967.
 alcoholysis of (GRÄNACHER), A., 84.
 presence of cysteine groups in (OKUDA), A., 1163.
 reducing properties of mixtures of dextrose with (BORSOOK and WASTENEYS), A., 313.
 recovery of, from compounds with formaldehyde (INTERNAT. GALALITH-GES. HOFF & Co., BARTELS, and EBERHARDT), (P.), B., 335.
 action of hypochlorites on (WRIGHT), A., 966.
 compounds of salts and (NORTHROP and KUNITZ), A., 352.
 silver compounds of (TAUB, JANSSEN, WESENBERG, and WINTHROP CHEMICAL Co.), (P.), B., 515*.
 sterilisation of (MILLS), (P.), B., 28.
 biological value of carbon of different (KAUFFMANN-COSLA and ROCHE), A., 1170.
 breakdown of, in frogs after liver extirpation (PRZYLECKI), A., 318.
 pancreatic digestion of (WILLSTÄTTER; NAKASHIMA), A., 1060.
 dialysis in tryptic digestion of (LUSTIG), A., 543.
 effect of fat on tryptic digestion of (MAUGHAN), A., 1174.
 relative nutritive value of, contained in Japanese food products (SUZAKI, MATSUYAMA, and HASHIMOTO), B., 418.
 substitution of glycine and ammonium acetate for, in diet (BUCKENAUER), A., 972.
 derivatives, water-soluble, preparation of (I. G. FARBENIND.), (P.), B., 899.
 alcohol-soluble vegetable, immunological properties of (LEWIS and WELLS), A., 193.
 basic (KOSSEL and STAUDT), A., 1268.
 of blood, acetylation of (TROENSEGAARD and KOUDAHL), A., 634.
 crystalline, with tuberculin activity (SEIBERT), A., 1062.
 deaminated, digestibility of, by proteolytic enzymes (NAKASHIMA), A., 1060.
 electrolyte-free water-soluble (FRISCH, PAULI, and VALKÓ), A., 121; (PAULI and WIT), A., 1007.
 from horse plasma, determination of lipins in (THEORELL), A., 1166.
 irradiated (CLARK), A., 1163.
 serum, refraction of (ARND and HAFNER), A., 421.
 rotatory dispersion of (HAFNER), A., 226.
 changes in physical properties of (PETSCHACHER), A., 856.
 volume of (NITSCHKE), A., 1051.
 nomenclature of (HAFNER), A., 421.
 fractionation of (ETTRICH and BECK), A., 751, 856; (BECK), A., 751.
 buffering properties of (GOLLWITZER-MEIER), A., 86.
 of normal and immune sera, sensitisation by (FREUNDLICH and BECK), A., 316.
 of human serum and plasma, osmotic pressure of (VERNEY), A., 856.
 of wool (TROTMAN, TROTMAN, and SUTTON), B., 150.
 analysis of (PLIMMER and ROSEDALE), A., 313.
 Sakaguchi's reaction for (POLLER), A., 1284.
 determination of (SEIBERT), A., 1164.
 determination of, in human blood-serum (STARLINGER and HARTL), A., 211.
 determination of, in cereals (THOMPSON), B., 845.
 determination of histidine, tyramine, and tyrosine in (HANKE), A., 633.
 determination of nitrogen in (VOIT), A., 444.
 determination of tryptophan in (TILLMANS and ALT), A., 189; (FÜRTH), A., 633.
 determination of tyrosine, tryptophan, and cystine in (LOONEY), A., 1050.
Proteobismuthic precipitates, radioactive, catalytic activities of (LABORDE, BRESSOLLES, and JALOUSTRÉ), A., 919.
Proteoses, determination of (SEIBERT), A., 1164.
Protocatechualdehyde, compounds of molybdates and tungstates with (FERNANDES), A., 1036.
Protocatechuic acid, preparation of (ZELLSTOFF-FABR. WALDHOF and ZICKMANN), (P.), B., 173; (HEUSER), (P.), B., 772.
Protocatechyl alcohol (ROSENMUND and BOEHM), A., 1136.
"Protoctine," and its salts and derivatives (SCHRYVER and BUSTON), A., 1049.
Protons, collision between electrons and (HUGHES and JAUNCEY), A., 221.
Protoparaffin waxes in petroleum (SACHANOV and BESTUSCHEV), B., 523.
Protopine, synthesis of (HAWORTH and PERKIN), A., 964.
Protoplasm, colloid chemistry of (HEILBRUNN), A., 902.
 permeability of, to ions (BROOKS), A., 645.
 living, chemical constitution of (LEPESCHKIN), A., 751.
 penetration of carbon dioxide into (OSTERHOUT and DORCAS), A., 204.
Protoporphyrin from hæmin (FISCHER and PÜTZER), A., 854.
Protozoa, utilisation of sugars by (COLAS-BELEOUR and Lvov), A., 1178.
Prussian blue, analysis of (BOWLES and HIRST), B., 679; (ENNA), B., 795.
Prystal (BARTHÉLEMY), B., 955.
Pseudo-acids (SEMERIA and PICHETTO), A., 30.
Pseudobrookite, crystal structure of (ROSDAUB and MARK), A., 889.
***Pseudotsuga Douglasii*, essential oil of the needles of** (ALINARI), B., 690.
Pseudo-wollastonite, heat capacity of (PARKS and KELLEY), A., 1087.
Psychosine, and its sulphate (KLENK), A., 749.
Puerperal eclampsia, calcium in blood in (v. BODÓ and LIEBMANN), A., 89.
Pulegone, constitution of (GRIGNARD and SAVARD), A., 72.
 α - and β -Pulegones, and their isomerides (GRIGNARD and SAVARD), A., 403.
Pulp, removal of moisture from (TASKER), (P.), B., 913.
Pulp industry, fifty years in (RUE), B., 818.
Pulp thickener, multiple-deck (ANKENY and DORR Co.), (P.), B., 425.
Pulverisation, device for (MORTON), (P.), B., 856.
 of solids (ODERBERGER CHEM. WERKE), (P.), B., 856.
Pulverisation apparatus (CARLINE), (P.), B., 112; (FISHER and READ), (P.), B., 648; (JEFFREY MANUF. Co.), (P.), B., 937; (BELL, LONDON, and INT. COMBUSTION ENG. CORP.), (P.), B., 967; (SYRACUSE PULVERIZER CORP. and BRIGGS), (P.), B., 999.
Pulverulent materials, mixing of (PONTOPPIDAN), (P.), B., 729.
Pulvinic acid, configuration and derivatives of, and *pp'*-dichloro-, and its amide (KARRER, GEHRCKENS, and HEUSS), A., 725.
Pump, laboratory, for circulation of gases (FRANCIS), B., 111.
 mercury vacuum, dependence of vacuum in, on purity of mercury vapour (MOLTHAN), A., 1038.
 mercury vapour (KAYE), A., 377.
Pumpellyite (PALACHE and VASSAR), A., 709.
Pungency and chemical constitution of acid amides (JONES and PYMAN), A., 60.
Purifiers, centrifugal, for liquids (DE LAVAL CHADBURN Co., LTD. and CHADBURN), (P.), B., 649.
Purines, electrochemical oxidation of (FICHTER and KERN), A., 742.
Putrescine, benzoyl derivative (DUDLEY and THORPE), A., 53.
Puzzuolana, heating of, and its reactions with alkaline-earth oxides and carbonates (MALQUORI), B., 709.
Pyrobrin (MEADER, ROBINSON, and LEONARD), A., 1062.
Pyrimidine, solubility of mixtures of acetanilide and (OLIVERI-MANDALÀ and FORNI), A., 238.
Pyrazole series, isomerism in (v. AUWERS and HOLLMANN), A., 623, 847; (ROJAHN and KÜHLING; v. AUWERS and MAUSS), A., 624; (v. AUWERS and STUHLMANN), A., 741.
Pyrazolone series (DE), A., 738.
Pyrazolonecarbothionic acids, esters and derivatives of (CHEM. FABR. SCHERING), (P.), B., 141.
Pyridine, preparation of, from the perchlorate, and its separation from ammonia (ARNDT and NACHTWEY), A., 525.
 distribution of, between water and benzene (WOODMAN and CORBET), A., 19.
 molecular volume of (MOLES), A., 778.
 equilibrium of sulphur and (HAMMICK and HOLT), A., 1102.
 degradation of (BAUMGARTEN), A., 844.
 compounds of arsenic halides with (DAFERT and MELINSKI), A., 622.
 action of cyanogen bromide and, on pyrroles (FISCHER and ERNST), A., 411.

- Pyridine, reaction of picryl chloride with, in alcoholic solution (HODGES), A., 1107.
 isoamyl and butyl sulphates (POPELIER), A., 1123.
 bromoaurate and compound with tetrabromoethane (FULTON), A., 305.
 glycolatoferriates (WEINLAND and LOEBICH), A., 499.
 cobalt and nickel molybdates (DI CAPUA), A., 304.
- Pyridine, amino-, and its acetyl derivative, platinum compounds of (ROSENHEIM and HÄNDLER), A., 958.
 2-amino-, tautomerism of, and its derivatives (TSCHITSCHIBABIN), A., 1153.
 condensation of, with aliphatic aldehydes (SCHMID and BECKER), A., 845.
 condensation of, with ketones (SCHMID and BANGLER), A., 848.
 condensation of, with thiocarbonyl chloride, and its benzene-sulphonyl derivative (SCHMID and BECKER), A., 845.
 4-amino-, derivatives of (KOENIGS, FRIEDRICH, and JURANY), A., 178.
 2-mono- and 2,6-di-amino-, derivatives of (MAGIDSON and MENSCHIKOV), A., 845.
 2,5-diamino-, and 5-nitro-2-amino-, 2-acetyl derivative (TSCHITSCHIBABIN and POZDNIakov), A., 845.
 2-chloro-5-iodo-, and 5-iodo-2-hydroxy-, preparation of (BINZ and RÄTH), (P.), B., 608.
- Pyridine bases, recovery of, from tar oils (PAPILLON), (P.), B., 232.
 quaternary (MAGIDSON and MENSCHIKOV), A., 844.
- Pyridine-3-carboxylic acid, manufacture of dialkylamides of (Soc. CHEM. IND. IN BASLE), (P.), B., 720.
- Pyridine-8-diazo- β -naphthol, 2-amino- (TSCHITSCHIBABIN and POZDNIakov), A., 845.
- Pyridine-N-oxide, and its salts (MEISENHEIMER), A., 1152.
- Pyridine-4,5:6-tricarboxylic acid, 3-nitro-2-hydroxy- (SAHASHI), A., 846.
- Pyridinium ethyl sulphate (BAUMGARTEN), A., 1131.
- 1-Pyridiniumsulphonic acid, preparation and reactions of (BAUMGARTEN), A., 844.
 use of, as sulphonating agent (BAUMGARTEN), A., 1130.
- 4-Pyridine, and its derivatives, ultra-violet absorption spectra of (RIEDEL and REINHARD), A., 734.
- 2-Pyridyl acetate and *p*-nitrobenzoate (TSCHITSCHIBABIN and SZOKOV), A., 179.
- 2- α -4-Pyridylbenzyl-3-quinoxaline (SINGH), A., 65.
- 2:2-Pyridylfuran-3-carboxylic acid, gold salt and ethyl ester of (WIBAUT), A., 1260.
- 4-Pyridylhydrazine, and its derivatives (KOENIGS, WEISS, and ZSCHARN), A., 413.
- 1- γ -Pyridyl-3-methylpyrazolone (KOENIGS, WEISS, and ZSCHARN), A., 413.
- 2:2-Pyridyl-5-methylpyrrole, and its picrate (WIBAUT and DINGEMANSE), A., 1260.
- Pyridyl-2-nitroamine, alkylation of (TSCHITSCHIBABIN and MENSCHIKOV), A., 845.
- 2-Pyridyloxamic acid, ethyl ester (REINDEL and ROSENDAHL), A., 743.
- 2:2-Pyridylpyrrole, synthesis of (WIBAUT), A., 1260.
- 2:2-Pyridylpyrrole-3-carboxylic acid, and its ethyl ester (WIBAUT), A., 1260.
- Pyrimidine derivatives, behaviour of, in organisms (HAHN and SCHÄFER), A., 203, 1062.
 synthetic glucosides of (HAHN, FASOLD, and SCHÄFER), A., 275.
 nucleosides, structure of (LEVENE, BASS, and SIMMS), A., 1260.
- Pyrimidines (JOHNSON and COHILL), A., 79.
- Pyridingotin, 8-thio-, synthesis of, and its *leuco*-derivative (PLAZEK and SUCHARDA), A., 1263.
- Pyrites, detection of wireless waves on the crystal faces of (GAUBERT), A., 229.
 combustion temperature of (BAUMANN), B., 87.
 roasting of (HÜTTIG and LÜRMANN), B., 628.
 production of iron from (TAMMANN and BÄTZ), B., 277.
 burnt, extraction of copper from (JUSCHKEVITSCH), B., 94.
 recovery of zinc from (SCHMIDT), (P.), B., 246.
 sulphatisation of (MAKOVECKI and SCHABALIN), B., 125.
 roasted, agglomeration of, for smelting (BRÜCK, KRETSCHEL & Co., and KIRPE), (P.), B., 754.
- Pyrites cinder, apparatus for reduction of (DUFFIELD), (P.), B., 411.
- Pyrites furnaces, utilisation of heat of gases from (CLEMM, SCHNEIDER, and ZELLSTOFF-FABR. WALDHOFF), (P.), B., 538.
- Pyrocatechol (*catechol*), preparation of (ZELLSTOFF-FABR. WALDHOFF and ZICKMANN), (P.), B., 173.
- Pyrocatechol, crystal structure of (CASPARI), A., 460.
 condensation of glycerol with (KAWAI), A., 290.
 compounds of metallic salts with (WEINLAND and SPERL), A., 165.
 complex metallic compounds with, and their use in micro-chemical analysis (MARTINI), A., 1244.
 compounds of molybdic acid and (WEINLAND, BABEL, GROSS, and MAI), A., 397.
 compounds of stannic acid and (WEINLAND and MAIER), A., 398.
 chloroacetates (OTT), A., 722.
p-nitrobenzyl allyl ether (KAWAI), A., 609.
- Pyrocatechol, 3:5-diamino-, diacetyl derivative, diacetate (KEHRMANN and POEHL), A., 728.
 4-bromodithio-, and dithio-, and their derivatives (GUHA and CHAKLADAR), A., 398.
 3:5-dinitro-, colorimetric dissociation constants of (LAXTON, PRIDEAUX, and RADFORD), A., 25.
- Pyrocatechol-*o*-carboxylic acid, preparation of (KAWAI), A., 290.
- Pyrocatechol-3:5-disulphonyl chloride, and its salts (POLLAK and GEBAUER-FÜLNEGG), A., 1244.
- Pyrocatechol- β -phenylpyridophthalein (TEWARI and DUTT), A., 1154.
- Pyrocoll, production of, from animal waste (MICHELMAN), (P.), B., 463.
- Pyrogallol (1:2:3-trihydroxybenzene), absorption of oxygen by (v. KOVACS-ZORKÓCZY), A., 100.
 molecular compounds of (WEISSENBERGER, SCHUSTER, and HENKE), A., 283.
 antimony compounds (CHRISTIANSEN), A., 722.
 compounds of molybdic acid with (WEINLAND, BABEL, GROSS, and MAI), A., 397.
 compounds of stannic acid and (WEINLAND and MAIER), A., 398.
 1:3-dimethyl ether, tribromo- and trichloro-, and their derivatives (HUNTER and LEVINE), A., 839.
 4-chloro-, and 4-chloro-5:6-dibromo-, and their salts (LEVINE), A., 1244.
 2:6-dimethyl ether, 3-bromo-, and 4:5-dichloro-3-bromo- (LEVINE), A., 516.
- Pyrogallol, 4:6-diamino- and -dinitro-, and their acetyl derivatives (KEHRMANN and POEHL), A., 729.
 bromo- and bromonitro-, ethers of (KOH and GRÜN), A., 284.
- Pyrogallolsulphonephthalein, and dibromo- and their salts and ethers (ORNDORFF and FUCHS), A., 949.
- Pyrogallolsulphonephthalin, and its zinc salt (ORNDORFF and FUCHS), A., 950.
- Pyroligneous acid, crude, methylcyclopentenolone from (ROJAHN and RÜHL), A., 616.
- Pyroisolithobilianic acid. See 3-Ketodeoxyprolithobilianic acid.
- Pyrometers, sheath for (JOHNSON), (P.), B., 648.
 optical (SIEMENS & HALSKE), B., 114*.
 radiation (PHILPOT), B., 855.
 photo-electric radiation (LINDEMANN and KEELEY), B., 79.
- Pyrometry, dilatation, alloy for (CHEVENARD), B., 546.
- Pyromorphites, synthetic (CAROBBi and RESTAINO), A., 811.
- Pyromucylanilide *o*-disulphide (BOGERT and STULL), A., 310.
- Pyrone dyes (FARB. v. BAYER & Co.), (P.), B., 234*.
- Pyrostadic acid, and its ethyl ester (WINDAUS), A., 724.
- Pyrosulphuryl chloride. See under Sulphur.
- Pyrotechnic compositions (HENDLER and U.S. SECRETARY FOR WAR), (P.), B., 902.
- Pyroxenes, chemical composition of (GOSSNER), A., 595.
- Pyroxylin, peptisation of (BYRON), A., 905.
- Pyrrhotin, structure of (DE JONG), A., 760.
- Pyrrole, and its derivatives, production of, from animal waste (MICHELMAN), (P.), B., 463.
 derivatives, oxidation of (PIERONI and VEREMEENCO), A., 1157.
- Pyroles, action of pyridine and cyanogen bromide on (FISCHER and ERNST), A., 411.
 arsenic and mercury compounds of (FISCHER and MÜLLER), A., 75.
 determination of active hydrogen in (FISCHER and POSTOWSKY), A., 630.
- Pyroles, amino-, formation of, by action of hydrazine on α : δ -diketones (KORSCHUN and ROLL), A., 1154.
 halogenated (FISCHER and WALACH), A., 1256.
- Pyroaldehydes, synthesis of (FISCHER and HALBIG), A., 621.
- α -Pyroaldehydes, synthesis of (FISCHER and ERNST), A., 621.
- Pyroale-2-carbithionic acid, and its salts (McCAY and SCHMIDT), A., 957.

Pyrrole-2-carboxylic acid, synthesis of (McCAY and SCHMIDT), A., 957.
 dissociation constants of (McCAY and SCHMIDT), A., 354.
 derivatives of (PUTOCHIN), A., 1151.
Pyrrolidine-5-carboxylic acid, 2-hydroxy- (ABDERHALDEN and SCHWAB), A., 734.
Pyrrolidone-2-carboxylic acid, synthesis of (McCAY and SCHMIDT), A., 957.
 dissociation constant of (McCAY and SCHMIDT), A., 354.
2-Pyrrolidone-5-carboxylic acid, action of ozone on (ABDERHALDEN and SCHWAB), A., 956.
Pyrroline-5-carboxylic acid, 2-hydroxy-, from glutamic acid (ABDERHALDEN and SCHWAB), A., 734.
 action of ozone on (ABDERHALDEN and SCHWAB), A., 956.
Pyrryl ketones, Friedel-Crafts synthesis of (FISCHER and SCHUBERT), A., 737.
Pyrus aucuparia, cyanophoric glucoside from bark of (ROSENTHALER), A., 210.
Pyruvaldehyde, hydroxy-, trimeride of (EVANS and WARING), A., 1227.
Pyruvic acid, structure of (PASCAL), A., 597.
 formation of, from methylglyoxal (NEUBERG and GORR), A., 272.
 formation of, in fermentation (TRAETTA-MOSCA), A., 978; (CAGAN), A., 1061.
 biochemical synthesis of fumaric acid from (GOTTSCHALK), A., 545.
 oxidation of, by metallic ions (FROMAGEOT), A., 1124.
 by ceric salts (FROMAGEOT), A., 820.
 4-pyridylhydrazones (KOENIGS, WEISS, and ZSCHARN), A., 413.
Pyruvic acid, trichloro-, manufacture of (SKRAUP and WOLFSCHLAG), (P.), B., 216.
Pyruvylhydroxamic acid, salts of (GASTALDI and STRATTA), A., 277.
Pyrylium compounds (DILTHEY and BERRES), A., 177; (DILTHEY, FRÖDE, and KOENEN), A., 1254.
Pyrylium salts, synthesis of (ROBERTSON and ROBINSON), A., 1042; (GATEWOOD and ROBINSON; NOLAN, PRATT, and ROBINSON), A., 1043.

Q.

Quanta, half, use of (HUTCHISSON and VAN VLECK; VAN VLECK), A., 1078.
Quantum mechanics (DIRAC; BORN), A., 1078.
 Heisenberg's (v. RASCHVSKY), A., 1192.
 processes, spontaneous (SMEKAL), A., 1192.
 theory in chemistry (HERZEN), A., 657.
 virtual oscillators and scattering in (VAN VLECK), A., 1078.
 in relation to dielectric constant (MENSING and PAULI), A., 886.
 in relation to dielectric constant and magnetic susceptibility (VAN VLECK), A., 886.
Quartz, colour and structure of (KLEMM and WILD), A., 665.
 ultra-violet rotation of (DUCLAUX and JEANTET), A., 886.
 action of radium rays on (LEITMEIER; DOELTER), A., 367.
 adsorption of water vapour on (LENIER), A., 898.
 working of (BERRY and GEN. ELECTRIC Co.), (P.), B., 489*.
 amethyst, optical properties of (RAMAN and BANERJI), A., 115.
 fused, purification of (THOMSON and GEN. ELECTRIC Co.), (P.), B., 55.
 massive (SCHAUER), B., 877.
 vitreous, properties of (WINSHIP), B., 947.
 α -Quartz, structure of (GIBBS), A., 227.
 β -Quartz, structure of (WYCKOFF), A., 228.
 α - and β -Quartz, structure of (BRAGG and GIBBS), A., 13.
 Quartz sand (SCHAUER), B., 877.
 Quebracho extracts, treatment of, to render soluble in cold water (GERB- & FARBSTOFFWERKE H. RENNER & Co.), (P.), B., 891.
 South American (VOGEL), B., 375.
Quercetin, synthesis and derivatives of (ALLAN and ROBINSON), A., 149.
 ferric salt (ZETSCHE and LOOSLI), A., 67.
 Quercimeritrin from *Helianthus annuus* (SANDO), A., 982.
Quercitol, configuration of (BÖESEKEN and JULIUS), A., 818.
 d -Quercitol, configuration of (KARRER), A., 398.
Quinic acid for differentiation of colon-aërogenes group of bacteria (BUTCHER), B., 390.
Quinine, rotation of, and its salts (SCHOORL), A., 627.

Quinine, action of arsenic trichloride on (ERBEN, PHILIPPI, SCHNIDERSCHITZ, SPORER, and DIAMANT), A., 188.
 effect of compounds of, on enzymic activity (HERZFELD and ENGEL; SMORODINCEV and LEMBERG), A., 94; (SMORODINCEV and DANILOV), A., 94, 202.
 poisoning of lipase by (RONA and GYOTOKU), A., 432.
 and its derivatives, action of, on metabolism and body temperature (ROSENTHAL and LIPSCHITZ), A., 1057.
 solutions, preparation of, for injection (CHEM. PHARM. A.-G. BAD HOMBURG), (P.), B., 853.
 salts, manufacture of (A.-G. CHEM. WERTE), (P.), B., 608.
 rotatory power of solutions of, in relation to hydrogen-ion concentration (LIQUIER), A., 906.
 hydrochloride, solubility of mixtures of antipyrine and (OLIVERI-MANDALÀ and CARLI), A., 238.
 sulphate, hydration of (CHAMÉ), A., 910.
 sulphatoperiodide. See Herapathite.
 determination of (DAVID), B., 172.
 determination of, and its fate after injection (HATCHER and WEISS), A., 1273.
Quinizarin, preparation of (REYNOLDS and BIGELOW), A., 521.
 manufacture of (DODD, SPRENT, and UNITED ALKALI Co.), (P.), B., 233.
 action of thionyl chloride on (GREEN), A., 839.
Quinol, manufacture of (ERLACH), (P.), B., 434.
 dimethyl ether, 2,6-dichloro-3,5-dibromo- (KOHN and HELLER), A., 582.
 determination of, volumetrically (KOLTHOFF), A., 1266.*
Quinol, hydroxy-, compounds of molybdates, tungstates, and uranates with (FERNANDES), A., 1036.
Quinoline, equilibrium of sulphur and (HAMMICK and HOLT), A., 1102.
 complex salts of, with mercuric halides, halogen acids, and water (DEHN), A., 304.
 complex salts of, with metallic chlorides, hydrochloric acid, and water (DEHN), A., 304.
 complex salts of, with alkyl and mercuric halides (DEHN and CORE), A., 1257.
 basic ethers of, and their hydrochlorides (CALLSEN and WINTHROP CHEM. Co.), (P.), B., 464.
 derivatives (JOHN and GROSSMANN), A., 179; (ZÖLLNER), A., 525; (JOHN and FISCHL), A., 525, 622; (JOHN), A., 846; (JOHN, GROSSMANN, and FISCHL), A., 958.
 methiodide, action of magnesium isobutyl and phenyl halides on (MEISENHEIMER, STOTZ, and BAUER), A., 76.
 propyl sulphate (POPELIER), A., 1123.
Quinoline 5-chloro-6-bromo-2,3-dihydroxy-, and its acetate (HELLER, FUCHS, JACOBSON, RASCHIG, and SCHÜTZE), A., 620.
 8-hydroxy-, alkylcarbamido-derivatives of (STEDMAN), A., 975.
*iso*Quinoline derivatives, synthesis of (CAMPBELL, HAWORTH, and PERKIN), A., 303.
*iso*Quinoline, 3,4-dihydroxy-, and its sodium salt (HELLER, FUCHS, JACOBSON, RASCHIG, and SCHÜTZE), A., 620.
 n - and *iso*-Quinoline bromoaurates and compounds with tetrabromochthane (FULTON), A., 305.
*iso*Quinoline alkaloids, synthesis of (EDWARDS), A., 735, 835.
 Quinoline series, crystalline methylene bases of (ROSENHAUER, HOFFMANN, and ÜNGER), A., 735.
Quinoline-2-aldehyde, 8-nitro- (HAMMICK), A., 846.
Quinoline-4-carboxylic acid, 2,6-dihydroxy-, constitution of, from rice husks (SAHASHI), A., 441.
 and its salts and esters (SAHASHI), A., 846.
 n - and *iso*-Quinoline- N -oxides, and their salts (MEISENHEIMER), A., 1152.
Quinoline- N -oxide-2-carboxylic acid (MEISENHEIMER and STOTZ), A., 77.
Quinoline-red, constitution of (SCHEIBE and FISCHER), A., 527.
Quinolise-5-sulphonic acid, 7-iodo-8-hydroxy-, sodium bismuth salt (MASCHMANN), A., 311.
 water-soluble complex bismuth compound of (FARBW. VORM. MEISTER, LUCIUS, and BRÜNING), (P.), B., 28.
 Quinolinic anhydride, reactions of, with aromatic hydrocarbons and aluminium chloride (JEPHCOTT), A., 304.
Quinolincupric acetylacetone (MORGAN and SMITH), A., 600.
 5,6-Quinolinfuran, and its salts (DEX and SESHADRI), A., 1159.
 5,6-Quinolinfuran- α -carboxylic acid, and its silver salt and ethyl ester (DEX and SESHADRI), A., 1159.

- 5:8-(5':6'-Quinolino)- α -pyrone, 3-bromo- and its salts and derivatives (DEX and SESHADRI), A., 1158.
- 2-Quinolone-4-carboxylic acid, alkyl esters (THIELEPAPE), (P.), B., 141.
- Quinol- β -phenylpyridophthalein, hydroxy- (TEWARI and DUTT), A., 1154.
- Quinone. See Benzoquinone.
- Quinones, absorption spectra of, and their relation to α -diketones (LIGHT), A., 992.
- tanning with (THOMAS and KELLY), B., 504.
- hydrogenated polynuclear, preparation of (SKITA, WARNAT, WULF, SIEGEL, and SCHREYER), A., 173.
- and their derivatives, bactericidal action of (HILPERT), A., 321.
- piperidine as reagent for (DILTHEY and WIZINGER), A., 1163.
- meri*Quinones, potentiometric and spectrophotometric study of (CLARK, COHEN, and GIBBS), A., 1008.
- Quinone dyes, vat, for dyeing animal fibres (HERZ and GRASSELLI DYESTUFF CORP.), (P.), B., 735.
- meri*Quinonoid compounds (PICCARD), A., 946.
- Quinlodine, and its derivatives (GRÄNACHER, OFNER, and KLOPFENSTEIN), A., 81.
- R.**
- Rabbits, nutrition of, with cow's and goat's milk (BROUWER), A., 425.
- calcification processes in (MELLANBY and KILLICK), A., 1181.
- Rabbling apparatus (EBERHARD HOESCH & SÖHNE), (P.), B., 114*.
- Racemisation (LEVENE and PFALTZ), A., 852, 1259.
- Radiation (LODGE), A., 774.
- law of (GIANFRANCHESCHI), A., 991.
- equilibria between matter and, in Einstein's closed universe (LENZ), A., 1191.
- measurement of intensity of (TOY), A., 135.
- by photographic methods (HOUSTOUN), A., 253; (GRIFFITH), A., 378.
- quantum theory of (LANDÉ), A., 221.
- absorption and emission of, by elements (LORING), A., 561.
- from discharge of electricity in gases (THOMSON), A., 988.
- production of, by electron collisions (JAUNCEY and HUGHES), A., 450.
- emitted by substances with high electrical resistance (REBOUL), A., 1072.
- frequencies of, due to disappearance of electrons (HOME), A., 221.
- forces due to (BRILLOUIN), A., 107.
- function of, in unimolecular reactions (HIRST and RIDEAL), A., 584.
- influence of, on metabolism (PINCUSSEN and MAKRENEOS; PINCUSSEN), A., 90.
- highly-penetrating, absorption coefficient of (KOLHÖRSTER), A., 553.
- ionising, measurement of (GREINACHER), A., 553.
- monochromatic, duration of emission of (PONTREMOLI), A., 551.
- quanta, action of matter on (WOLFFERS), A., 881.
- resonance, nature of (SLATER), A., 1078.
- intensity and extinction of (ORTHMANN and PRINGSHEIM; GOOS and MEYER; DITCHBURN), A., 334.
- depolarisation of, by magnetic fields (BREIT), A., 224.
- chemical reactions produced by (TAYLOR, MARSHALL, and BATES), A., 252; (RIDEAL and HIRST), A., 480.
- Radicals, interchange of, between solids (HEDVALL and NORSTRÖM), A., 695.
- cyclic and acyclic, saturation and migratory capacities of (TIFFENEAU and LÉVY), A., 383, 818.
- free, in chemical reactions (WIELAND and FISCHER), A., 46; (WIELAND, VOM HOVE, and BÖRNER), A., 61.
- use of chromous chloride for preparation of (ZIEGLER, FRIES, and SALZER), A., 955.
- organic, tenacity of (v. BRAUN and MURJAHN), A., 829.
- Radioactinium, β -ray spectra of, and its disintegration products (HAHN and MEITNER), A., 105.
- Radioactive atoms, structure of, and their γ -ray spectra (THIBAUD), A., 6.
- elements, β -ray disintegration of (ELLIS and WOOSTER), A., 6.
- minerals, calculation of age of (HOLMES and LAWSON), A., 1075.
- nodules from Japan (IMORI), A., 380.
- products, distribution of, in free air (SCHMIDT), A., 656.
- rocks. See under Rocks.
- Radioactive substances, kinetics of emission from (WOLFF), A., 1190.
- long-range α -particles from (CURIE and YAMADA), A., 220.
- Compton theory applied to β - and γ -rays from (CURIE), A., 655.
- artificial disintegration of (WALTER), A., 1190.
- Radioactivity of rocks. See Rocks.
- Radium, recovery and purification of the active deposit from (CURIE), A., 5.
- γ -ray spectrum of (THIBAUD), A., 333.
- ionisation of active deposit of (ERIKSON), A., 4.
- emanation. See Radon.
- preparations with high emanating power (HAHN and HEIDENHAIN), A., 332.
- rays, coloration of minerals by (LEITMEIER; DOELTER), A., 367.
- and its disintegration products, emission of β -rays by (KINO-SHITA, KUKUCHI, and HAGIMOTO), A., 1076.
- chemical reactions produced by β - and γ -rays of (ERRERA and HENRI), A., 1077.
- analysis of β - and γ -rays of (LATTÈS), A., 880.
- effect of, on metabolism (ROSENBLUM), A., 199.
- errors in determination of (BACKHURST), A., 771.
- separation of barium and (BASHILOV), (P.), B., 742.
- separation of, from radium-barium mixtures (FLECK and BELL), (P.), B., 743.
- Radium-A and -C, range of α -particles from (CURIE and MERCIER), A., 1190.
- Radium-B, L-spectrum of (BLACK; RUTHERFORD and WOOSTER), A., 6.
- Radium-B and -C, preparation of sources of (JEDRZEJOWSKI), A., 771.
- β -ray spectra of (GURNEY), A., 5.
- energy of γ -rays from (ELLIS and WOOSTER), A., 6.
- decay of (BRACELIN), A., 553.
- Radium-C, ionisation curves of rays from (CURIE and BEHOUNEK), A., 655.
- β -ray recoil of, from radium-B (BARTON), A., 553.
- Radium-D, β -ray spectrum of (CURTISS), A., 450.
- Radium-D and -E, electrodeposition of (McHUTCHISON), A., 804, 990.
- adsorption of (McHUTCHISON), A., 655.
- Radium-E, decay of (CURTISS), A., 771.
- Radium-F, precipitation of, on copper, gold, and silver and their alloys (TAMMANN and RIENÄCKER), A., 1190.
- Radium salts, antagonism of potassium to (NADSON and ŽOLKEVIČ), A., 91.
- separation of barium salts and (BACHLOV), (P.), B., 538.
- Radon (*radium emanation*; *niton*), critical voltages of (STREUVE), A., 552, 876.
- purification of (HESS, LEMAN, and U.S. RADIUM CORP.), (P.), B., 274.
- chemical action produced by (LIND and BARDWELL), A., 4.
- action of, on mixtures of ammonia with carbon oxides (BAILEY), A., 254.
- effect of, on invertase (HUSSEY and THOMPSON), A., 202.
- determination of, in air (BÉHOUNEK), A., 220.
- Raffinase, relation of, to invertase (JOSEPHSON), A., 94.
- Raffinose, in crystallisation of sugar (MEHRLE), (B.), 294.
- Railroad ties, magnesium oxychloride cement (JAEGER), (P.), B., 363.
- Rain, nitrogen compounds in (SHUTT and HEDLEY), A., 267.
- Raincoats, rubbered, rubber solutions for (ESCH), B., 890.
- Rana fusca*, effect of hydrogen-ion and salt concentration on spermatozoa of (BARTHÉLEMY), A., 1273.
- Rancidity, tests for (BULIR), B., 66.
- Rape oil (SUDBOROUGH, WATSON, AYYAR, and DAMLE), B., 954.
- identification of (THOMAS and MATTIKOW), B., 499.
- Raphanus sativus*, methyl mercaptan in roots of (NAKAMURA), A., 210.
- Rats, fat and glycogen in experimental obesity of (FOSTER and BENNINGHOVEN), A., 1271.
- synthesis of purines by, and their effect on the nuclear-plasmic ratio (TRUSZKOWSKI), A., 638.
- breeding of, for work on fat-soluble vitamins (SMITH and CHICK), A., 436.
- albino, use of, in standardisation of insulin (KARCZAG, MACLEOD, and ORR), A., 1180.
- white, feeding of glands to (McKINLEY and FISHER), A., 643.
- effect of cholesterol on reproduction in (SUZUKI and HASHIMOTO), A., 863.

- Rays, polarisation of, excited by electron impact (ELLETT, FOOTE, and MOHLER), A., 221.
- canal, scattering of, by metal foil (HOMMA), A., 880.
- passage of, through hydrogen and mercury (RUPP), A., 450.
- cathode, penetration of matter by (BECKER), A., 1076.
- as substitutes for potassium in Ringer's solution (ZWAARDEMAKER and FEENSTRA), A., 319.
- high-voltage, outside the generating tube (COOLIDGE), A., 989.
- high-frequency, of cosmic origin (MILLIKAN), A., 450.
- penetrating, existence of, at high altitudes (HESS), A., 450.
- absorption of, in water (MYSSOVSKI and TUWIN), A., 221.
- positive, scattering of, by hydrogen (THOMSON), A., 656.
- excitation of X-rays by collision of α -particles and (GERTHSEN), A., 655.
- in thermionic vacuum tubes with alkali metal vapours (IVES), A., 218.
- residual (REINKROBER), A., 1190.
- Röntgen, tubes for production of (MOPPETT), (P.), B., 592.
- with detachable electrodes (OWEN and PRESTON), A., 1223.
- ionometric measurement of (DE LARQUETTE), A., 553.
- intensity of (LORING), A., 551.
- refraction of, in prisms of various substances (SLACK), A., 781.
- model gratings to show the diffraction of, by crystals (BRAGG), A., 12.
- reflexion of, by crystals (MARK and SZILARD), A., 330; (BRAGG, DARWIN, and JAMES; SCHLAPP), A., 663; (HAVIGHURST), A., 780.
- by crystals of its own characteristic radiation (DUANE), A., 446; (ALLISON), A., 447.
- by fatty acids (PRINS and COSTER), A., 781.
- intensities of reflexion of, from powdered sodium chloride (HARRIS, BATES, and MACINNES), A., 995.
- spectra of. See under Spectra.
- fluorescence in the region of (AUGER), A., 551.
- excitation of, by collision of α -particles and positive rays (GERTHSEN), A., 655.
- reproduction of tracks of β -particles from (DARBYSHIRE; COMPTON and SIMON), A., 1076.
- transformation of β -rays into (GRAY), A., 1076.
- K-radiation from the target of (BALDERSTON), A., 767.
- ejection of photo-electrons by (DE FOE), A., 1187.
- scattering of (BARKLA and KHAISTGIR), A., 987.
- by calcium and by fluorine (JAMES and RANDALL), A., 663.
- by iron and oxygen (CLAASSEN), A., 1072.
- internal absorption and spark lines of (ROBINSON), A., 875.
- absorption of (ALLEN), A., 447.
- theory of absorption of (HOUSTON), A., 987.
- absorption coefficients of (READ; POSEPAL), A., 551.
- absorption of, in crystalline compounds (HAVIGHURST), A., 987.
- absorption limits of, for metals (ANDREWES, DAVIES, and HORTON), A., 214.
- absorption of, by water (FRICKE, GLASSER, and ROTHSTEIN), A., 1072.
- energy and ionisation produced in air by (KULENKAMPFF), A., 456.
- outer energy levels of, for various elements (CHAMBERLAIN and LINDSAY), A., 1072.
- effect of, on conductivity of solid dielectrics (ROOS), A., 456.
- sensitisation of insensitive compounds to (PESKOV), A., 225.
- biological action of (DAUVILLIER), A., 199; (ELLINGER and GANS), A., 320; (DOGNON), A., 541.
- antagonism of potassium salts to the action of (NADSON and ŽOLKEVIČ), A., 91.
- substances for administration to patients before examination by (BAKER), (P.), B., 108.
- barium sulphate as protection against (HUNT), A., 706.
- films for instantaneous exposures with (SPECKLIN), (P.), B., 300.
- fluorescent screens for (JAHODA and LILIENTHAL), (P.), B., 220.
- utilisation of luminescent materials for screens for (MARCOTTE), (P.), B., 29.
- polarised, Compton effect and photo-electric effect in (KIRCHNER), A., 768.
- scattered, β -rays associated with (NUTTALL and WILLIAMS), A., 656.
- Rays, Röntgen, scattered, influence of the scattering substance on intensity of the Compton line in (ROSS), A., 1072.
- modified (BARKLA and KHAISTGIR), A., 217.
- soft (DAUVILLIER), A., 551; (HOLWECK), A., 767.
- from metals (CHU), A., 2.
- analysis by means of (GOLDSCHMIDT), A., 996; (GÜNTHER and WILCKE), A., 997.
- analysis of alloys by means of (PHEBUS and BLAKE), A., 1083.
- analysis of crystalline powders by means of (LEVI), A., 227.
- α -Rays, projectors for tracks of (KNIPP and SOWERS; PYE), A., 1076.
- influence of metallic screens on ionisation of (CONSIGNY), A., 772.
- α - and β -Rays, action of d - and l -adrenolines on the radiophysiological equilibria of (ZWAARDEMAKER), A., 554.
- β -Rays, manufacture of preparations emitting (WRESCHNER and LOEB), (P.), B., 768.
- produced in gases by α -particles (CHADWICK and EMELÉUS), A., 220.
- absorption of, by matter (LATTÉS and FOURNIER), A., 5, 105; (FOURNIER), A., 880.
- absorption coefficient of (YOYANOVITCH and DORABIALSKA), A., 772.
- transformation of, into X-rays (GRAY), A., 1076.
- associated with scattered X-rays (NUTTALL and WILLIAMS), A., 656.
- collisional (AUGER), A., 553.
- secondary, direction and range of (FRÄNZ), A., 1190; (NUTTALL and WILLIAMS), A., 1191.
- β - and γ -Rays from radioactive substances, application of the Compton theory to (CURIE), A., 655.
- γ -Rays, spectra of. See under Spectra.
- scattering and absorption of (GRAY), A., 1076.
- scattering effect of, in water (HOFFMANN), A., 656.
- absorption coefficient of (YOYANOVITCH and DORABIALSKA), A., 772.
- secondary radiation produced by (CLARK), A., 1076.
- from the actinium series (MEITNER), A., 106.
- Ray liver oils (ROGERS), B., 19.
- fatty acids of (TSUJIMOTO), B., 593, 712.
- Reactions, regions of (JORISSEN and ONGKIEHONG), A., 909, 1205.
- end-point of (SMITH), A., 362; (SHEPPARD), A., 913.
- diagrams of (JORISSEN), A., 246.
- course of, with the interferometer (SCHAUM and BARTH), A., 914.
- carrying out and controlling of (MÜLLER and CHEM. FABR. BUCKAU), (P.), B., 256.
- lowering of the order of, by hydrogen ions (ROZENBERG), A., 914.
- anomalies of (ANGELI), A., 914.
- at high pressures (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 236.
- equipment for (ERNST), B., 647.
- chemical, energy of formation, contraction, and polymerisation in (BECK), A., 1211.
- free radicals in (WIELAND, VOM HOVE, and BÖRNER), A., 61.
- carrying-out of (MARKS and A.-G. F. CHEMIEWERTE), (P.), B., 967.
- apparatus for (BRUTZKUS), (P.), B., 616*.
- mixing apparatus for (BUITZ), (P.), B., 520.
- temperature-sensitive devices for controlling (BRITISH THOMSON-HOUSTON Co., LTD., WARREN, NEWBOND, and BELL), (P.), B., 650.
- kinetics of (ZAWIDZKI), A., 362, 363, 364, 914.
- critical increment of (SUTTON), A., 480.
- expression of equations of, as functions of time (BOTELLA), A., 1009.
- between solids at high temperatures (TAMMANN), A., 921.
- rhythmic (SEIDEL), A., 20.
- termolecular (COUTIE), A., 580.
- interaction of molecules in (PRINS), A., 1009.
- unimolecular, mechanism of (ROY), A., 483.
- Realgar, photochemical disintegration of (WEIGEL), A., 366.
- Receptacles, determination of the volume and weight of contents of (BRITISH LAUNDERERS' RESEARCH ASSOC., PARKER, JACKMAN, and VOWLER), (P.), B., 1000.
- Recrystallisation, theory of (OHASHI), A., 563.
- Rectification (GAY), B., 223.
- Recuperators (TEISEN), (P.), B., 426*.

- Red lead. See Triplumbic tetroxide under Lead.
- Reductase of milk (BARTHEL), B., 605.
- of muscle (BRUGSCH, HORSTERS, and NARITA; BRUGSCH, HORSTERS, and HARADA), A., 198.
- in plants (PALLADIN, PLATISCHENSKI, and ELLADI; v. EULER and NILSSON), A., 95.
- of yeast (v. EULER and NILSSON), A., 323, 544, 868.
- Reducer, Jones', effect of air in (BURDICK), A., 706.
- Reduction (TRAUBE and LANGE), A., 257.
- mechanism of (PRINS), A., 33, 171.
- mechanism of, *in vitro* (QUASTEL), A., 434.
- of organic compounds, by thermal decomposition (KLING and FLORENTIN), A., 381.
- irreversible, of organic compounds (CONANT and CUTTER), A., 616; (CONANT and PRATT), A., 1134.
- Reduction-oxidation (HIRSCH and RÜTER), A., 930.
- Reductoisobilobanic acid, and its methyl ester (BORSCHKE and FRANK), A., 1140.
- Reels, collapsible, for winding filaments, threads, etc. (BRYSLKA, LTD. and SCHUBERT), (P.), B., 945.
- Reflecting power of metallic sulphides (ASAGOE and KUMAGAI), A., 892.
- Reflocculated products, manufacture of (ACHESON), (P.), B., 224.
- Refraction, double, dispersion of, and the thickness of mica plates (HORI), A., 887.
- of organic liquids (VORLÄNDER and WALTER), A., 110.
- molecular, and molecular volume (HERZ), A., 110.
- of polymethylene compounds (EISENLOHR and GORR), A., 718.
- of salts (HERZFELD and WOLF), A., 11.
- Refractive index of alcohols in water and cotton-seed oil (MUNCH), A., 749.
- of gases, effect of magnetic fields on (FRASER), A., 567.
- of binary mixed liquids (ANOSOV), A., 234.
- of dilute solutions with the interferometer (BARTH), A., 779.
- Refractivity, ionisation potentials and absorption spectra (MORTON and RIDING), A., 558.
- of organic compounds in relation to structure (FAJANS and KNORR), A., 336.
- Refractometer (SCHULZ), A., 931.
- temperature control for (CASEY), A., 1118.
- small-range (SCHULTZ), B., 458.
- Refractometry (v. AUWERS), A., 456.
- Refractories (LUBOWSKY, and METAL & THERMIT CORP.), (P.), B., 129*; (SCHUTZ), B., 540.
- manufacture of (F. M. and F. J. LOCKE; ATELIERS DE CONSTRUCTION OERLIKON), (P.), B., 363; (LONGCHAMON and TRAVERS), (P.), B., 408; (GROSVENOR SCIENTIFIC PRODS. and TURNER; JACKMAN and VESUVIUS CRUCIBLE CO.), (P.), B., 542; (FARISH), (P.), B., 586.
- process and materials for making (BETTS), (P.), B., 667.
- thermal expansion of (NORTON), B., 157.
- behaviour of, up to cone 40 (GORTON and GROVES), B., 127.
- fractional fusion of (HUSTIN), B., 157.
- drying of (WILSON and LYKKE), (P.), B., 362.
- requirements of, for gas plants (COLE), B., 916.
- for electric furnaces, from tungsten powder (HÄRDÉN), B., 922.
- for melting metals (JORDAN, PETERSON, and PHELPS), B., 951.
- testing of, for refractoriness and after-contraction, and their use in vertical gas retorts (RHEAD and JEFFERSON), B., 440*.
- eighteen months' high-temperature test on (RIDDLE and PECK), B., 240.
- effect of atmospheric conditions on the load test for (SHEERAR), B., 631.
- casting slip for (BELLAMY and WESTERN ELECTRIC CO.), (P.), B., 586.
- laboratory furnace for testing, under load (IELSER), B., 158.
- acid- and fire-proof (WOLFSHOLZ), (P.), B., 824*.
- rich in alumina, analysis of (SCHÜRMANN and BÖHM), B., 90.
- cyanite-clay (HARRISON; McCAGHEY and HARRISON), B., 631.
- fire-clay, attack of arsenic compounds on (TURNER), B., 667.
- fireclay and silica, diffusivity and conductivity of (GREEN), B., 947.
- magnesite (U.S. METALS REFINING Co. and MARKS), (P.), B., 586.
- mullite, formed by calcining cyanite (FREED), B., 631.
- silica, use of (ROBINSON), B., 158.
- for gas retorts (EMERY), B., 145.
- sillimanite, for glass making (McINTYRE), B., 585.
- zirconium oxide, manufacture of (DEUTSCHE GASGLÜHLICHT-AUERGES.), (P.), B., 947.
- Refractory materials, electrical resistance of (FERGUSON), B., 824.
- determination of the bulk and pore volumes of (HARTMANN, WESTMONT, and MORGAN), B., 631.
- temperature-sensitiveness of, in glass industry (ENDELL and STEGER), B., 789.
- in combustion chambers, failure of (DALE), B., 980.
- manufacture of articles from (MYLER), (P.), B., 14.
- acid-resisting (WOLFSHOLZ), (P.), B., 632.
- heat-insulating (CELITE Co.), (P.), B., 790.
- Refrigerant (STITT), (P.), B., 224.
- Refrigeration (COFFEY), (P.), B., 144; (LEBLANC and SOC. ANON. EXPLOIT. PROC. LEBLANC-VICKERS), (P.), B., 567; (STITT REFRIGERATION Co. and STITT), (P.), B., 776*.
- Refrigeration apparatus (HOLMES), (P.), B., 114; (GRAY; GREEN), (P.), B., 114*; (SENSSENBRENNER; CARRIER, and CARRIER ENGINEERING CORP.), (P.), B., 145*; (THOMSON), (P.), B., 176; (McNUTT and KITSON ENGINEERING Co.), (P.), B., 224*.
- absorption (PLATEN-MUNTERS REFRIGERATING SYSTEM), (P.), B., 1, 855; (SIEMENS-SCHUCKERTWERKE), (P.), B., 519; (MANNESMANN KÄLTE-IND. A.-G.), (P.), B., 855; (REHSING), (P.), B., 1000.
- for absorption of ammonia or similar gases (ANDERSON, MAIURI, and BOSSINI), (P.), B., 936.
- Refrigeration machines (BRITISH THOMSON-HOUSTON Co. and ORR), (P.), B., 776.
- absorption (BAYER GEBR.), (P.), B., 32.
- Refrigeration plant (BIAGGINI), (P.), B., 729.
- Refuse, utilisation of, for making glass (GROTE), (P.), B., 158.
- household, grading of (HADFIELD), (P.), B., 121*.
- treatment of (GERSON), (P.), B., 726*.
- utilisation of coke contaminated with vegetable matter from (HADFIELD), (P.), B., 428.
- town, production of ash or clinker from (HEYL), (P.), B., 1016.
- manufacture of cement from (HEYL), (P.), B., 587.
- utilisation of, as fertiliser (REGE), B., 335.
- Relativity, application of, to atomic and molecular systems (DE DONDER), A., 657.
- Rennin (MARUI), A., 866.
- colloidal chemistry of coagulation by (PALMER and RICHARDSON), A., 905.
- coagulation of milk by (DE DOMINICIS and LA ROTONDA), A., 1174.
- action of, on milk proteins (ZAYKOVSKI), A., 543.
- relation between pepsin and (WOHLGEMUTH and SUGIHARA), A., 94.
- Reproduction and diet (GRIJUS), A., 546; (SURE), A., 981.
- effect of cholesterol on (SUZUKI and HASHIMOTO), A., 863.
- Resacetophenone dimethyl ether 2:4-dinitrophenylhydrazon (SKRAUP and BÖHM), A., 722.
- Research, physico-chemical, at high temperatures (JAEGER), A., 895.
- Resins, manufacture of (SCHAAL), (P.), B., 137; (CARTER and KARPEN & BROS.), (P.), B., 202; (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING; SOC. CHEM. IND. IN BASLE), (P.), B., 203.
- pure, preparation of, from some crude gum materials (BUCHAN), (P.), B., 761*.
- decolorising and refining of (AUTREY), (P.), B., 68.
- treatment of (WILLARD), (P.), B., 686.
- improvement of (CONSORTIUM F. ELEKTROCHEM. IND., BAUM, and HERRMANN), (P.), B., 597.
- determination of colour depth or brightness of (FONROBERT and PALLAUF), B., 201, 450, 760.
- determination of softening point of (NAGEL), B., 333.
- recovery of, from pulp mill black liquor (GREENWOOD and PINE WASTE PRODUCTS, INC.), (P.), B., 10.
- from wood, etc. (FISH), (P.), B., 596.
- solvents for (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 248.
- solvent for extraction of (RIEDEL), (P.), B., 597.
- relation between viscosity of solutions of, and constitution of the solvent (KEYSSNER), B., 248.
- extraction apparatus for (MacGREGOR and SCOTT & Co.), (P.), B., 923.
- adsorption of, by paraffin wax (TSCHERNOSHUKOV), B., 307.
- oxidation of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 987.
- commercial, unsaponifiable constituents of (KNÄCHT and MAURICE), B., 21.
- in coal (FRANCIS and WHEELER), B., 650.

- Resins from cyclohexanol and formaldehyde (ELLIS and ELLIS-FOSTER Co.), (P.), B., 68.
 from ketobutyl alcohol (ELLIS), (P.), B., 68.
 from phenols and methylal (CARTER, COXE, and KARPEN & BROS.), (P.), B., 202.
 from tobacco (SCHMUCK), A., 547.
 for manufacture of optical apparatus (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 203.
 sesquiterpenes from (VESTERBERO), A., 731.
 acid, hard bituminous material of high fusing point from (I. G. FARBININD.), (P.), B., 865.
 aldehyde, refining of (HERRMANN, DEUTSCH, and CONSORTIUM FÜR ELEKTROCHEM. IND.), (P.), B., 838*.
 artificial (BRITISH THOMSON-HOUSTON Co., WRIGHT, and BARTLETT), (P.), B., 414; (BRITISH CYANIDES Co. and ROSSITER), (P.), B., 451; (REGAL), (P.), B., 596, 714*, 797*;
 (SOC. VERRERIES FOLEMBRAY; BRUHAT; ROPP), (P.), B., 955;
 (BAEKELAND, GOTTHELF, and BAKELITE CORP.), (P.), B., 956.
 manufacture of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 99, 202;
 (CHEM. FABR. SCHERING), (P.), B., 100;
 (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 100, 502;
 (WRIGHT and GEN. ELECTRIC Co.; KULAS and PAULING; SCHAAL), (P.), B., 502*;
 (KARPEN & BROS.), (P.), B., 502*, 761*;
 (CHEM. FABR. GÜSTROW, HILLRINGHAUS & HEILMANN; SOC. CHEM. IND. IN BASLE), (P.), B., 596;
 (SINGER and KUNSTHAARFABR. REGAL & Co.; MEIGS), (P.), B., 838.
 stable to light and air (EITRICH), (P.), B., 760.
 from crude anthracene and phenanthrene (BAKELITE GES. and FLORENZ), (P.), B., 502.
 retardation of hardening of (ELLIS and ELLIS-FOSTER Co.), (P.), B., 502.
 artificial and natural (SCHEIBER), B., 501.
 colour reactions of (SHONO), B., 595.
 coumarone, treatment of (ELLIS and ELLIS-FOSTER Co.), (P.), B., 248.
 furfuraldehyde-acetone (RICHARDSON and CUTLER-HAMMER MANUF. Co.), (P.), B., 596.
 natural, distillation of (CHEVALIER, BOURCET, and REGNAULT), (P.), B., 502.
 synthetic (STOKES), (P.), B., 137; (BRITISH THOMSON-HOUSTON Co. and ADAMS), (P.), B., 638; (ELLIS), (P.), B., 797;
 (FLEET, POTTER, and DAMARD LACQUER Co.; HELM; PROGRESS A.-G.; BAKELITE GES. and SEEBACH), (P.), B., 889;
 (BRUNN; RESAN KUNSTHAARZERZEUGUNGS-GES.M.B.H.), (P.), B., 890;
 (BRITISH THOMSON-HOUSTON Co. and PETERSON; CHEM. FABR. ALBERT, AMANN, and FONROBERT), (P.), B., 988; (WALKER), (P.), B., 1021.
 purification of (BAKELITE GES.), (P.), B., 924.
 apparatus employed in condensation processes of (BRITISH THOMSON-HOUSTON Co., WARREN, NEWBOUND, and BELL), (P.), B., 681.
 treatment of textiles with (BRITISH CYANIDES Co., ROSSITER, and DAVIS), (P.), B., 977.
 compositions containing (ELLIS), (P.), B., 68; (PETROV), (P.), B., 554.
 manufacture of articles from (BRITISH CYANIDES Co. and ROSSITER), (P.), B., 988.
 containing magnesium (ELLIS and ELLIS-FOSTER Co.), (P.), B., 596.
 sulphur phenol (SOC. CHEM. IND. BASLE), (P.), B., 681*.
 examination of (WOLFF and TOELDTE), B., 796.
 coniferyl reaction of (REINITZER), B., 987.
 analysis of, by adsorption methods (STOCK), B., 679.
 detection of, particularly in linseed oil varnishes (BRAUER), B., 595.
 detection of, in paints (SCHULZ and KRÄMER), B., 796.
 determination of santonin in (VOGTHERR), B., 510.
 Resin acids from hops (WIELAND and MARTZ), A., 1249.
 determination of fatty acids and, in varnishes (WOLFF), B., 202.
 Resin size. See under Size.
 Resin soaps, water-insoluble, manufacture of (UZAC), (P.), B., 414.
 Resin substitute (CHEM. FABR. SCHERING, FREUND, and JORDAN), (P.), B., 203*.
 Resinates, aluminium, in paper sizing (OMAN), B., 912.
 calcium, preparation of (STERKERS and BREDEAU), A., 792.
 lead (COFFIGNIER), B., 553.
 Resinous substances, production of, by acetylation of fatty and other substances (BOURGOIN), (P.), B., 288.
 for use as moulding powders (BOORNE and BUDDE), (P.), B., 374.
 "Resites," manufacture of, by condensation of phenols and aldehydes (KULAS and PAULING), (P.), B., 890.
 Resodicarboxylic acid. See *iso*Phthalic acid, dihydroxy-.
 Resokaempheride. See 4'-Methoxyflavone, 3:7-dihydroxy-.
 Resorcinol, condensation of succinonitrile with (MURAI), A., 951.
 preparation of phthaleins from (GEORGE), A., 1149.
 ethers, thio-, nitro-derivatives of (FINZI and PAGLIARI), A., 948.
 diphenyl ether, chloro-2:4-dinitro- (BORSCHIE and TRAUTNER), A., 391.
 methyl ether, thallous salt (CHRISTIE and MENZIES), A., 56.
 α -naphthylurethane from (FRENCH and WITTEL), A., 830.
 acyl and alkyl derivatives of (DOHME, COX, and MILLER), A., 838.
 Resorcinol, 4:6-dinitro-, colorimetric dissociation constants of (LAXTON, PRIDEAUX, and RADFORD), A., 25.
 Resorcinolbenzein, absorption spectra of (ORNDORFF, GIBBS, and SHAPIRO), A., 733.
 Resorcinoldipropionic acid, thio-, derivatives of (FINZI), A., 1255.
 Resorcinoldisulphonic acid, derivatives of (POLLAK, GEBAUER-FÜLNEG, and BLUMENSTOCK), A., 833.
 Resorcinol- β -phenylpyridophthalein (TEWARI and DUTT), A., 1154.
 Resorcinoltrisulphonic acid, derivatives of (POLLAK, GEBAUER-FÜLNEG, and BLUMENSTOCK), A., 833.
 Resorcylaldehyde 3:5-dichloro-6-nitrophenylhydrazono (MÜLLER and HOFFMANN), A., 163.
 Respiration, assimilation, and fermentation (WINDISCH), B., 603.
 cataphoresis in (KELLER and GICKLHORN), A., 353.
 effect of high altitudes in aeroplane flight on (SCHNEIDER and CLARKE), A., 633.
 chemical regulation of (GESELL), A., 633; (MCGINTY and GESELL), A., 967.
 effect of chemical agents on (KOCHMANN), A., 540.
 effect of heavy metals on (COOK), A., 540.
 effect of thiocyanates on (TARUGI), A., 190.
 of plants. See under Plants.
 in tissues (WARBURG), A., 190.
 in animal tissues (LOEBEL), A., 84; (MEYERHOF and LOHMANN), A., 753, 754; (TAKANE), A., 764.
 and liver catalase (WARBURG), A., 633.
 Respiration apparatus (DETHLOFF; MCCLENDON, HUMPHREY, and LOUCKS), A., 1067.
 Respirators, oxygen from peroxides for (HANSEATISCHE APPARATEBAU v. BREMEN & Co.), (P.), B., 254.
 Respiratory centre, action of carbonic acid on the (HETÉNYI, HOLLO, and WEISS), A., 84.
 Respiratory diseases, chlorine treatment for (GILCHRIST), A., 637.
Reticularia lycoperdon, constituents of the plasmodium of (KIESEL), A., 204.
 Retorts (FORSSÉN), (P.), B., 696; (KOHLENVEREDLUNG GES.), (P.), B., 972.
 cleaning inner walls and moving parts of, while in operation (QUENEAU), (P.), B., 575*.
 discharging solid products from (DEGENHARDT), (P.), B., 479*.
 removal of residues from (SCHWAPACH), (P.), B., 224*.
 for solid materials (QUENEAU), (P.), B., 118.
 carbonisation (QUENEAU and HEISCH), (P.), B., 6*;
 (MERZ & McLELLAN and WEEKS), (P.), B., 262; (SCHULTZ), (P.), B., 654; (PAVELIK), (P.), B., 699.
 continuous vertical (THWAITES and PACKER), B., 180.
 for fuels (PLASSMANN), (P.), B., 228.
 distillation, charging and discharging of (QUENEAU), (P.), B., 575*.
 gas off-take pipes for (MUELLER), (P.), B., 397*.
 for material containing hydrocarbons (DEVAUX), (P.), B., 38.
 gas, charging and discharging of (CANNING and CLARK), (P.), B., 42*.
 setting of (GIBBONS BROS., LTD. and MASTERS), (P.), B., 655;
 (TOOGOOD and DEMPSTER & SONS), (P.), B., 699; (HISLOR), (P.), B., 734.
 refractories for (EMERY), B., 145.
 stand-pipes for (ALDRIDGE, CARR, and ASHLEY), (P.), B., 477.
 vertical, three-day test of (KLEMAN), B., 82.
 vertical or inclined (WOLLASTON), (P.), B., 84.
 rotary (F. S. and M. A. BACON), (P.), B., 473*.
 distillation (NIELSEN), (P.), B., 655*.
 shale (CORFIELD), (P.), B., 119; (POPE), (P.), B., 147.

- Retorts, vertical, coke extractors for (F. J. and E. WEST and WEST'S GAS IMPROVEMENT CO., LTD.), (P.), B., 655.
for distillation of shale (CROZIER), (P.), B., 228.
for low-temperature carbonisation (PFEIFFER), (P.), B., 229.
continuous, steaming in (BARASH), B., 938.
- Retort furnaces (LUCAS and VICKERS, LTD.), (P.), B., 6*.
- Retting of flax (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 152.
- Rhamnetin, ferric salt (ZETZSCHE and LOOSLI), A., 67.
- isoRhamnetin, synthesis of (HEAP and ROBINSON), A., 1149.
- Rhamnodiastase, hydrolysis of plant glucosides by (BRIDEL and CHARAUX), A., 201.
- d-Rhamnonolactone (VOTOČEK and VALENTIN), A., 940.
- Rhamnose, constitution of (HIRST and MACBETH), A., 273.
and its derivatives, ring structure of (HUDSON), A., 714.
hydrazones and osazones of (VOTOČEK, ETTLE, and KOPPOVA), A., 501.
isopropylidene ether (FREUDENBERG and WOLF), A., 601.
- d-Rhamnose, and its derivatives (VOTOČEK and VALENTIN), A., 940.
- Rhamnose, enzyme from species of (BRIDEL and CHARAUX), A., 201.
material for use in paint manufacture from species of (MAISON BRETON, FICHOT & Co. and CRUT), (P.), B., 595.
- Rhenium. See Dvi-manganese.
- Rhizopus nigricans, synthesis of fumaric acid from pyruvic acid by (GOTTSCALK), A., 545.
- Rhodanine, use of, in syntheses (GRÄNACHER, OFNER, and KLOPFENSTEIN), A., 81.
- Rhodinol, preparation of (FARBENFABR. FORM. BAYER & Co.), (P.), B., 771.
- Rhodium, absorption spectrum of (MEGGERS and LAPORTE), A., 1193.
colloidal (GUTHRIE and LEUTHEUSSER), A., 121.
- Rhodium salts, ternary complex (ZVJAGINSTSEV), A., 698.
- Rhodium chlorides and oxides (WÖHLER and MÜLLER), A., 138.
- Rhodium separation:—
separation of platinum from (WADA and NAKAZONO), A., 141.
- Rhodochrosite, thermal decomposition of (HEDVALL), A., 684.
- Rhodoxanthin, physical and chemical properties of (LIPMAA), A., 534.
- Rhönite, composition of (GOSSNER), A., 595.
- Rhus javanica, tannin in leaves of (UEDA and ISHINADA), B., 1021.
- Rhus toxicodendron, irritant product from leaves of (MASUCCI and MULFORD Co.), (P.), B., 76.
- Rhus trichocarpa, tannin in leaves of (UEDA), B., 1021.
- Rhythmic reactions. See under Reactions.
- Rice, dihydroxyquinolinecarboxylic acid from hydrolysis of husks of (SAHASHI), A., 441.
polished, alcohol-soluble proteins from (HOFFMAN), A., 441.
- Rice hulls, paper pulp from (MORGENIER), (P.), B., 269; (J. F. and H. F. L. PUTTAERT), (P.), B., 661.
- Rice plants, influence of fertilisers on hydrogen-ion concentration of juice of (MIYAKE and ADACHI), A., 1065.
- Rice straw, disintegration of, to increase its fodder value (IWATA), B., 765.
alcohol from (TAKETOMI), B., 508.
- Ricinoleic acid, separation of, from mixed fatty acids of castor oil (INOKUCHI), B., 285.
- Ricinoleylphenylhydrazide (VAN ALPHEN), A., 47.
- Rickets, calcification in (GLANZMANN), A., 637.
phosphorus and calcium metabolism in (SCHULTZER), A., 1181.
experimental (McCOLLUM, SIMMONDS, and BECKER), A., 1279.
- Rigor, chemistry of (DEUTICKE), A., 318.
- Rings, four-membered, polarity in relation to (BURKHARDT, LAPWORTH, and WALKDEN), A., 58.
- Roads, laying of dust on (ALLCHEMIE ALLGEM. CHEM. IND. and LICHTENSTERN), (P.), B., 409.
- Road-making, manufacture of tar for (SENSICLE), (P.), B., 909, 942.
bituminous mixtures for (UNIVERSAL RUBBER PAVIORS and BROWN), (P.), B., 276.
materials, drying, heating, and mixing of (JOHNSTON and DAVIES), (P.), B., 114*.
mortar for (VAN WESTRUM), (P.), B., 363.
- Roasting of materials in bulk (DOBBELSTEIN), (P.), B., 904.
- Robinson, CHARAUX, A., 1183.
- Robinson, hydrolysis of (CHARAUX), A., 1183.
- Rocks, age of, from helium or lead ratios (WILKINS), A., 654.
Röntgen-ray investigation of (RINNE), A., 229.
- Rocks, bromine and iodine in (v. FELLEBERG and LUNDE), A., 1022.
iron in (MACCARTHY), A., 265, 933.
analysis of gases from (METTA), A., 813.
basaltic, of Derbyshire, chlorites in (TOMKEIEV), A., 1119.
pre-Cambrian, sources of carbon in (MOORE), A., 143.
from China (WASHINGTON and KEYES), A., 710.
extrusive, genetical interpretation of (TSUBOI), A., 933.
leucitic, classification of (LACHOIX), A., 379.
radioactive, in Australia, age of (COTTON), A., 934.
volcanic, of Christmas Island (SMITH and MOUNTAIN), A., 494.
graph for analyses of (BECKE), A., 815.
- Rock-salt, photo-electric conductivity of (ARSENJEVA), A., 782.
photo-electric effect on blue and violet crystals of (GYULAI), A., 225.
influence of an electrostatic charge on conductivity of (VAHLANT), A., 116.
action of radium rays on (LEITMEIER; DOELTER), A., 367.
coloured (PIPPS and BRODE), A., 658.
bending of, in air and water (LEWITSKY), A., 338.
See also Sodium chloride.
- Rope, impregnation of (LANGE), (P.), B., 122*.
- Roses, wax from (PROPHÈTE), A., 981, 1281.
- Rose-Bengal, combination of proteins with (ROSENTHAL; ROSENTHAL and ACKMAN), A., 1271.
- Rosin, composition of (SHAW and SEBRELL), B., 595.
glyceride (ester gum) (WOLFF), B., 501.
detection of, in linseed oil (WOLFF), B., 66.
- Rosin oil, composition of (KNECHT and MAURICE), B., 21.
from Bucovinian fir trees (CZERNY), B., 248.
- Rotatory power and chemical constitution (PHILLIPS), A., 159; (HARRISON, KENYON, and SHEPHERD), A., 509; (DOMLEO and KENYON), A., 948; (HARRISON, KENYON, and PHILLIPS), A., 1031.
relation between relative configurations of optically active compounds and (CLOUGH), A., 937.
of molecules in an electric field (LESSHEIM), A., 333.
and structure of sugars (HUDSON, PRINGSHEIM, and LEIBOWITZ), A., 276; (PHELPS and HUDSON), A., 501; (HUDSON), A., 714, 941; (KUNZ and HUDSON), A., 941, 1127.
of polysaccharides (PRINGSHEIM and LEIBOWITZ), A., 275.
effect of salts on (DARMOIS), A., 661.
specific, influence of viscosity on (P. and J. ACHALME), A., 778.
use of, in analysis (JACOB), A., 374.
- Rubber, two-phase structure of (HAUSER), B., 100.
theory of needle-shaped molecules of (LINDMAYER), B., 924.
electro-deposition of (SHEPPARD, EBERLIN, and EASTMAN KODAK Co.), (P.), B., 598, 629, 794; (ELLIOTT), B., 682; (BEAL, EBERLIN, and EASTMAN KODAK Co.; SHEPPARD, BEAL, and EASTMAN KODAK Co.), (P.), B., 793.
from emulsions (KLEIN and SZEGLYARI), (P.), B., 289.
on metal wires (SHEPPARD, EBERLIN, and EASTMAN KODAK Co.), (P.), B., 794.
manufacture of (HAMON), (P.), B., 375; (K.D.P.), (P.), B., 598; (LOOMIS, STUMP, and HEYER CORP.), (P.), B., 1021.
with minute pores (BECKMANN), (P.), B., 957.
influence of particle size in (PICKLES; SCHIDROWITZ; DAWSON; TWISS), B., 956.
and the rubber industry (BONGRAND), B., 101*.
blending of compounding ingredients for (DAWSON), B., 374.
mineral ingredients for (TWISS and MURPHY), B., 502.
mastication of (HAUSER and DANNENBERG), B., 333.
treatment of (SMITH and NAUGATUCK CHEM. Co.), (P.), B., 23*;
23*;
(SPEAR and GOODYEAR TIRE & RUBBER Co.), (P.), B., 69; (JONES), (P.), B., 715*;
(DUNLOP RUBBER Co., YOUNG and CAMPBELL), B., 938.
with aliphatic diamines and their derivatives (CADWELL and NAUGATUCK CHEMICAL Co.), (P.), B., 798.
density of, in relation to aggregation, vulcanisation, deformation, and temperature (KRÖGER), B., 715.
polymerides from (GEIGER), B., 681.
fibrous nature of (KIRCHHOFF), B., 797.
atmospheric oxidation of (SMITH and WOOD), B., 713.
retarding action of antioxidants in the deterioration of (WEBER), B., 925.
calendering of (DUNLOP RUBBER Co. and PENFOLD), (P.), B., 939.
softeners for (BURBRIDGE), B., 598.

- Rubber, vulcanisation of** (MOLONY and VANDERBILT CO.; STEVENS; WINKELMANN, TRUMBULL, and GOODRICH CO.), (P.), B., 23; (PEACHEY and SKIPSEY; WHITTELEY, BRADLEY, and NAUGATUCK CHEM. CO.), (P.), B., 68; (CAMBRON and ROESSLER & HASSLACHER CHEM. CO.), (P.), B., 69; (FEUCHTER), B., 100; (DICKSON and GOODRICH CO.), (P.), B., 101; (CHEM. FABR. KALK and OEHME), (P.), B., 101*; (CADWELL and NAUGATUCK CHEMICAL CO.; GILLET and GOODYEAR TIRE & RUBBER CO.), (P.), B., 138; (SHEPARD, KRALL, and FIRESTONE TIRE & RUBBER CO.; SHAW and GOODYEAR TIRE & RUBBER CO.; ATLANTIC DYESTUFF CO. and BURRAGE), (P.), B., 453; (DOVAN CHEMICAL CORP.), (P.), B., 453*; (SEBRELL and GOODYEAR TIRE & RUBBER CO.), (P.), B., 599, 761; (FARR. v. BAYER & CO.), (P.), B., 599; (BRITISH DYESTUFFS CORP., CRONSHAW, and NAUNTON), (P.), B., 682; (CHUTE), (P.), B., 798; (HEUSER and BURRAGE), (P.), B., 989.
- physical and normal processes of (KRÖGER), B., 598.
- low-temperature (THOMAS), B., 374.
- heat reactions during (PERKS), B., 715.
- in hot air (BYSOV), B., 101.
- in solution (GREINERT and BEHRE), B., 452.
- colloid-chemical processes in hot vulcanisation of (POHLE), B., 554.
- effect of formation of colloidal precipitates during vulcanisation on mechanical properties of (MARTIN and DAVEY), B., 555.
- rate of combination of sulphur with, in vulcanite (GLANCY, WRIGHT, and OON), B., 204.
- acceleration of vulcanisation of (SCOTT and DU PONT DE NEMOURS & CO.; RICARD, ALLENET & CO.), (P.), B., 289; (EMDEN), B., 925.
- by alkaloids (EATON and BISHOP), B., 375.
- accelerators of (BRITISH DYESTUFFS CORP., CRONSHAW, and NAUNTON), (P.), B., 138; (LEFEBURE, HAILWOOD, and BRITISH DYESTUFFS CORP.), (P.), B., 205*; (PAULSON and ROESSLER & HASSLACHER CHEMICAL CO.; WILLIAMS and ROESSLER & HASSLACHER CHEMICAL CO.), (P.), B., 453; (NORTH), (P.), B., 555*; (SCOTT and RUBBER SERVICE LABORATORIES CO.), (P.), B., 682; (HARDMAN and KELLY SPRINGFIELD TIRE CO.), (P.), B., 797; (BUCHANAN and AMER. CYANAMID CO.), (P.), B., 798.
- furfuraldehyde derivatives as (TRUCKEY and LEUCK), B., 890.
- super-accelerators for (NAUNTON), B., 797.
- effect of accelerators on vulcanisation and quality of (DINSMORE and ZIMMERMAN), B., 289.
- reversion of, during vulcanisation in presence of "vulkono" (STOLL), B., 101.
- action of light in accelerated ageing of (JECUSCO), B., 452.
- accelerated ageing tests for (PARK), B., 452.
- theory of blooming of (DITMAR), B., 1021.
- physical properties of (VAN ROSSEM and VAN DER MEYDEN), B., 502, 555*.
- elasticity-hysteresis and colloid structure of (FEUCHTER), B., 204.
- origin of the X-ray interferences in the stretching of (HAUSER), B., 638.
- stress-strain relationship of, under compression (BIRKETT), B., 374.
- effect of heat generated during stressing on tensile properties of (BOONE and NEWMAN), B., 597.
- alteration of degree of dispersion of (EVERS), B., 288.
- as dispersion medium (POHLE), B., 204.
- dielectric constant, power factor, and resistivity of (CURTIS and MCPHERSON), B., 503.
- solvents for (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 248.
- solutions for rubbered raincoats (ESCH), B., 890.
- consistency measurements of benzene solutions of (HERSCHEL and BULKLEY), A., 1003.
- sols, cataphoresis of, in benzene (HUMPHREY and JANE), A., 1204.
- absorption of water by (BOGGS and BLAKE), B., 374.
- coagulation of, with sodium silicofluoride (EDWARDES), B., 288.
- chemistry of (STAUDINGER), B., 289.
- chemical unsaturation of, under various treatments (FISHER and GRAY), B., 503.
- oxidation of, when exposed to light (WILLIAMS), B., 452.
- protein film round globules of (STEVENS), B., 100.
- condition of the "resin" in (LOEWEN), B., 597.
- Rubber, influence of state of subdivision of, in extraction of resins** (REINER), B., 288.
- p*-nitrophenol as mould preventive for (STEVENS), B., 554.
- reclaiming of, with alkali (STAFFORD), B., 167.
- reclaimed, use of, as substitute for new rubber (BIERER and DAVIS), B., 452.
- waste, distillation of (BAIRGOIS), (P.), B., 761.
- compounding of (LOOMIS, STUMP, and HEVEA CORP.), (P.), B., 22; (MORGAN & WRIGHT and MEYER), (P.), B., 761*.
- heat-plastic materials from (GOODRICH CO.), (P.), B., 453.
- plastic masses from cellulose esters and (GARKE, MEYER, and CLAASEN), (P.), B., 152.
- incorporation of, in non-aqueous materials (WEISS), (P.), B., 167.
- fillers for (EBERLEIN and COLLOISIL COLOUR CO.), (P.), B., 680.
- and rubber goods, production of carbon black for use in the manufacture of (WARD), (P.), B., 796.
- combinations of paper and (HOPKINSON, ROSE, and GEN. RUBBER CO.), (P.), B., 555.
- manufacture of varnishes from (MECHANICAL RUBBER CO.), (P.), B., 136.
- comparative resiliency of heels of leather and (WILSON), B., 138.
- differentiation of various kinds of (ENKLAAR), B., 554.
- See also Caoutchouc.
- Rubber, artificial and natural, hydrogenation of** (SIEMENS & HALSKE), (P.), B., 453.
- crêpe, prepared with different reagents (STEVENS), B., 333.
- native (SPOON), B., 681.
- matured (DE VRIES and SPOON), B., 203.
- old, recovery of rubber and fabric from (MARCHEL), (P.), B., 290.
- cyclopentadiene (BRUSON and STAUDINGER), B., 451.
- plantation, ageing tests on (CEYLON RUBBER RESEARCH SOCIETY), B., 838.
- raw, elastic properties of, in relation to packing density (KRÖGER), B., 761.
- plasticity of (DE VRIES), B., 204; (GRIFFITHS), B., 374.
- variations of plasticity, nerve, and rate of vulcanisation of (GREINERT and BEHR), B., 890.
- Joule effect in (HOOK and BOSTROEM), B., 715.
- aggregation and re-aggregation of (KRÖGER), B., 137, 797.
- relative rate of oxidation of monophase caoutchouc gel and (FEUCHTER), B., 204.
- calender- and creep-effect in (DE VISSER), B., 68.
- determination of quality of (GREINERT and BEHR), B., 374.
- sheet, use of clotted latex in manufacture of (STEVENS), B., 415.
- smoked sheet, preparation of, with *p*-nitrophenol, by the coagulating and soaking processes (STEVENS), B., 1021.
- coagulation of, and prevention of mould (STEVENS), B., 288.
- smoked sheet and pale crêpe, differences in plasticity between (DE VRIES), B., 204.
- unsmoked sheet, preparation of, with dinitro-*o*-cresol (STEVENS), B., 1021.
- slab, large-scale preparation of (DE VRIES and SPOON), B., 203.
- solo crêpe, plasticity of (STEVENS), B., 167.
- stretched, structure of (HAUSER and MARK), A., 1098; B., 334, 761; (REINER), B., 956; (HAUSER), B., 956*.
- synthetic, Joule effect with (HOOK and SIEDLER), B., 597.
- unmasticated (DAVEY), B., 924.
- vulcanised, influence of high temperature on stress-strain curve of (VAN ROSSEM and VAN DER MEYDEN), B., 502, 555*.
- variations in tensile strength of (EATON and BISHOP), B., 555.
- preservation of (ROBEL & FIEDLER), (P.), B., 289.
- devulcanisation of (WILLARD), (P.), B., 957.
- weathering of (SHEPARD, KRALL, and MORRIS), B., 598.
- regeneration of (GALLOIS), (P.), B., 453.
- ageing test for (STEVENS), B., 761.
- decrease of sub-permanent set of, with increased period of vulcanisation (YAMASAKI), B., 761.
- influence of diphenylguanidine on mechanical properties of (STOLL), B., 988.
- organic dyes for (DRAKELEY), B., 797.
- removal of sulphur from (ODOM), (P.), B., 682.
- determination of sulphur in (KAHANE), B., 639.
- cold-vulcanised, tensile strength of (ZETTLIN), B., 204.
- prevention of ageing of (ESCH), B., 838.
- soft vulcanised, production of (TECH. CHEMIKALIEN CO.), (P.), B., 23.
- unvulcanised, aqueous emulsions of sulphur and (SHEPPARD, EBERLIN, and EASTMAN KODAK CO.), (P.), B., 794.

- Rubber adhesives (GOODRICH and GEER), (P.), B., 798.
 Rubber articles, production of (DITMAR), (P.), B., 453.
 moulded, manufacture of (DALES, CABLE, and GOODRICH Co.), (P.), B., 555.
 Rubber cement (TAYLOR and TAYLORALL, INC.), (P.), B., 205.
 Rubber compositions, manufacture of (ACHESON), (P.), B., 23;
 (WIEGAND), (P.), B., 555; (BIDDLE), (P.), B., 715, 957;
 (O'BRIEN, BEEBE, and GOODYEAR TIRE & RUBBER Co.), (P.), B., 1021.
 containing absorbent material (ALI-COHEN), (P.), B., 598.
 Rubber compounds, manufacture of (MEYER and MORGAN & WRIGHT), (P.), B., 22.
 Rubber emulsions, concentration or coagulation of (KLEIN and SZEGVÁRI), (P.), B., 204.
 Rubber goods, direct production of, from rubber emulsions (KLEIN and SZEGVÁRI), (P.), B., 797.
 adsorptive powders for (DITMAR), B., 1021.
 U.S. Govt. specification for testing of, B., 68.
 separation of textiles from rubber in (MARMIER and DE GAALON), (P.), B., 453.
 coloured, manufacture of (I. G. FARBENIND. and ZIESER), (P.), B., 838.
 Rubber industry, fifty years in (ORNSLAGER), B., 838.
 prevention of lead poisoning in (KLEIN), B., 715.
 Rubber insulation, mechanical test for (HIPFENSTEEL), B., 452.
 Rubber latex, viscosity of, viscosimeter for measurement of (DITMAR), B., 682.
 drying of (GEN. RUBBER Co.), (P.), B., 167; (HOPKINSON, ROSE, and GEN. RUBBER Co.), (P.), B., 555.
 concentration of (K.D.P., LTD.), (P.), B., 956.
 preservation of, with ammonia (DE VRIES), B., 681.
 mixing of materials with (HOPKINSON), (P.), B., 138*.
 impregnation of materials with (SCHILTHUIS and WILHELM), (P.), B., 22.
 coagulation of, with sodium silicofluoride and *p*-nitrophenol (STEVENS), B., 68.
 spraying of, in presence of protective colloids (DAVEY), B., 167.
 coloured, production of, resistant to vulcanisation (DITMAR), B., 797.
Hevea, constituents of (BELGRAVE), B., 288.
 specific gravity of (DE VRIES), B., 681.
 formic acid as coagulant for (DE VRIES, SPOON, and RIEBL), B., 203.
 vulcanised, and its commercial applications (SCHIDROWITZ), B., 204.
 distempers (RIGBY), (P.), B., 167*.
 Rubber membranes. See under Membranes.
 Rubber mixtures, stiffening action of carbon black in (SPEAR and MOORE), B., 452.
 substitute for American carbon black in (WIEGAND), B., 890.
 with modern reinforcing agents (ESCH), B., 597.
 determination of fineness of mineral fillers for (KIRCHHOFF), B., 289.
 Rubber pigments, detection of grit in (MURPHY), B., 956.
 Rubber plants, utilisation of (LAHEY), (P.), B., 957.
 Rubber printing blocks, etching of (SOC. D'EXPLOIT. PROC. D'IMPRESSION SARDOU), (P.), B., 205*.
 Rubber products, age-resisting (FULLER and FISK RUBBER Co.), (P.), B., 375.
 containing cork, manufacture of (GRIMOIN-SANSON), (P.), B., 205.
 Rubber stocks, internal mixers for (SHOAF), B., 452.
 Rubber substitute obtained by action of silent discharge on fatty oils (HOCK), B., 503.
 Rubber trees, periodic tapping of (GRANTHAM; EATON and BISHOP), B., 137.
 application of disinfectants in the cultivation of (STEINMANN and DEUSS), B., 681.
 Rubicene, constitution of (DZIEWOŃSKI and SUSZKO), A., 161.
 Rubidium, spectrum of, at low voltages (NEWMAN), A., 2.
 absorption spectrum of, with polarised light (v. ANGERER and JOOS), A., 1080.
 spark spectrum of (OTSUKA), A., 651.
 and its bromide, magnetic susceptibilities of (CROW), A., 14.
 vapour, thermionic phenomena with (KILLIAN), A., 653.
 films on glass, electric and photoelectric properties of (IVES and JOHNSON), A., 998.
 replacement of, in its salts by iron (HACKSPILL and PINCK), A., 1015.
 Rubidium chloride, residual rays from (REINKOBER), A., 1190.
 silver gold halides (VOGEL; EMICH), A., 562.
- Rubidium detection and determination:—
 detection and determination of (FREUNDLER and MÉNAGER), A., 702.
 determination of (STRECKER and DIAZ), A., 261.
 Rubrene, and its peroxide (MOUREU, DUFRAISSE, and BUTLER), A., 945.
Rubus argutus (blackberry), inositol from (SANDO), A., 982.
 Ruthenium (HOWE and HAYNES; HOWE and MERCER), A., 138.
 absorption spectrum of (MEGGERS and LAPORTE), A., 1193.
 arc spectrum of (MEGGERS and LAPORTE), A., 446.
 Zeeman effect in arc spectrum of (SOMMER), A., 767.
 crystal structure of (LEVI and HAARDT), A., 996.
 Ruthenium tetrachloride (AOYAMA), A., 698.
 chlorides, isomeric (HOWE), A., 926.
 complex compounds of (CHARONNAT), A., 37.
 Chlororuthenates, isomeric (BRIGGS), A., 926.
 Hexachlororuthenates (HOWE and HAYNES), A., 138.
 Pentachlororuthenates (HOWE and HAYNES), A., 138.
 Ruthenium detection and determination:—
 detection of (REMY), A., 1219.
 determination of (HOWE and MERCER), A., 138.
 Rutile, crystal structure of (VEGARD), A., 663.
 Rye, effect of potassium chlorate on germination of (STROBEL and SCHARER), A., 1066.
 manuring of, with sodium nitrate (KUHNERT), B., 959.
- S.
- dl*-Sabinic acid (PENFOLD and SIMONSEN), B., 804.
 Sabinol, oxidation of (HENDERSON and ROBERTSON), A., 1252.
 "Saccharin" (*o*-benzoisulphinide), bitter by-product in manufacture of (HERZOG), B., 993.
 use of by-product from manufacture of, in production of synthetic tannins and in tanning (HERZOG), B., 599.
 degree of sweetness of (TAUFEL and KLEMM), B., 106.
 detection of, in foods (SOFF), B., 847.
 See also *o*-Benzoisulphinide.
Saccharomyces ananensis, synthesis of coporphyrin by (FISCHER and FINK), A., 324.
Saccharomyces cerevisiae, permeability experiments with (SÜHNGEN and WIERINGA), A., 978.
Saccharomyces Ludwigii, synthesis and fermentation of glycogen by (GOTTSCHALK), A., 544.
Saccharomyces sake, stimulating action of yeast extracts on growth of (TAKADA), A., 1276.
 Saffron (PIERLOT), B., 107.
 Safranines (COBENZL), B., 656.
 Saffrole, isomerisation of (HIRAO), A., 1135.
 Sagger bodies, cone 10 (FRITZ), B., 917.
 clays, thermal expansion of (GELLER and HEINDL), B., 917.
 Salad oil, increasing the durability of (ROLLMANN and FOSTER), (P.), B., 414.
 Salicin, and its tetra-acetyl derivative (KUNZ), A., 275.
 Salicylaldehyde, equilibria of, with phenols (KREMAN and ZECHNER), A., 396.
 condensation of, with benzyl methyl ketone (DICKINSON), A., 1144.
 alkali salts (SIDGWICK and BREWER), A., 71.
 hydrazones of (VOTOČEK, ETEEL, and KOPPOVA), A., 501.
 3:5-dichloro-6-nitrophenylhydrazones (MÜLLER and HOFFMANN), A., 163.
 p-toluenesulphonate (FREUDENBERG and HESS), A., 935.
 Salicylaldehyde acetate, and 3:5-dibromo-, and its diacetyl derivative (LINDEMANN and THIELE), A., 1047.
 Salicylallylamide-acetic acid, and its mercury compound (FARW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 218.
 Salicylamide, condensation of, with aliphatic aldehydes (MOUCKA and RÖGL), A., 626.
 Salicylic acid, heat of combustion of (BERNER), A., 116; (VERKADE and COOPS), A., 785.
 as a thermochemical standard (VERKADE and COOPS), A., 127;
 (COHEN, VERKADE, MIYAKA, COOPS, and VAN DER HOEVE), A., 1103.
 volatility of (LERRIGO), B., 298.
 solubility of, in benzene (COHEN and VAN DOBBENBURGH), A., 18.
 complex compounds of tungstic acid and (WEINLAND, BABEL, GROSS, and MAI), A., 398.
 metabolism of. See under Metabolism.

- Salicylic acid**, salts, assay of (CLARK), B., 767.
 salts and derivatives, absorption spectra of (PURVIS), A., 557.
 basic uranium salt (LOBANOV), A., 372.
 diboroacetate (DIMROTH), A., 298.
n-butyl ester (FARR, V. BAYER & Co), (P.), B., 464.
 2:4-dinitrobenzyl ester (KRASSOVSKI and PLISSOV), A., 949.
 methyl ester, use of, in flow-meters (FOSTER), B., 175.
 determination of, clinically, in physiological fluids (LOBERG), A., 648.
- Salicylic acid**, thio-. See Benzoic acid, *o*-thiol.
- 5-Salicylidene-2:3-diphenylisothiohydantoin**, and 5-3':5'-dichloro- (HANN and MARKLEY), A., 623.
- Salicylidene-*l*-isomenthylamine** (READ and ROBERTSON), A., 1147.
- Salicylidene-*dl*-piperitone** (EARL and READ), A., 1040.
- Salicylodinitrile**, *dithio*- (ARNDT, KIRSCH, and NACHTWEY), A., 843.
- Salidroside** (BRIDEL and BEGUIN), A., 983.
- Saliva**, calcium and potassium content of (ALFERN), A., 858.
 variation in urea and other nitrogenous material in (DESGREZ, MOOG, and GABRIEL), A., 195.
- Salivary glands** (YAMAGUCHI), A., 87.
- Salix triandra***, constituents of (BRIDEL and BEGUIN), A., 983.
- Salt**, common. See Sodium chloride.
- Salts**, extraction of, from aqueous solutions (SALT PRODUCTION SYND.), (P.), B., 875.
 purification of (I. G. FARBENIND.), (P.), B., 487.
 electrical conductivity of acetone solutions of (WALDEN, ULICH, and BUSCH), A., 1104.
 influence of the solvent on solubility and light absorption of (HANTZSCH and CARLSOHN), A., 1202.
 effect of non-electrolytes on solubility of, in water (MCAULAY), A., 1089.
 evaporation of solutions of (COLLARD), (P.), B., 438.
 vacuum cooling of solutions of (KALI-FORSCHUNGS-ANSTALT), (P.), B., 808.
 treatment of solutions of (BINDER), (P.), B., 822.
 diffusion of, in flames (SYMON), A., 464.
 internal friction and density of mixed aqueous solutions of acids and (GRUNERT), A., 350.
 equilibrium between metals and, in the molten state (LORENZ), B., 244.
 adsorption of, by microbes (PAVLOV), A., 900.
 of weak acids and weak bases, alcoholysis of (GOLDSCHMIDT and MATHIESEN), A., 577.
 compounds of proteins and (NORTHROP and KUNITZ), A., 352.
 physiological action of (JENDRASSIK and ANTAL), A., 755.
 basic (BENRATH), A., 695.
 double, existence of, in solution (ROUYER), A., 923.
 fused, conductivity of (KLEMM and BILTZ; BILTZ and KLEMM), A., 667.
 anode-effect in electrolysis of (v. WARTENBERG, MANTHEY, and CONZELMANN), A., 912.
 solubility of strong electrolytes in (GROSS), A., 350.
 density and molecular state of (KLEMM), A., 670.
 insoluble, influence of lyophilic colloids on precipitation of (BOLAM and MACKENZIE), A., 678.
 mineral, effect of addition of, to diet of sheep (ELLIOT and CRICHTON), B., 251.
 neutral, behaviour of, in high-tension fields (KELLER and GICKLHORN), A., 970.
 solid, conductivity of (VAILLANT), A., 802.
 See also Metallic salts.
- Salt action** (SHAUGHNESSY and CRISWELL), A., 203.
- Salt-cake**. See Sodium sulphate.
- Salt hydrates**, contraction constants of (BALANDIN), A., 788.
 transition points of, in non-aqueous solvents (LUCASSE and HARRIS), A., 799.
- Saltpetre**, Chile. See Sodium nitrate.
 crude Indian, separation of potassium nitrate and other salts from (HAMID), B., 914.
- Salvadora oleoides***, fat from (PATEL, IYER, SUDBOROUGH, and WATSON), B., 1019.
- Salvarsan** (arsphenamine; *diaminodihydroxyarsenobenzene hydrochloride*), manufacture of (KÖBER), (P.), B., 217.
 physical and colloid chemistry of (HUNTER and PATRICK), A., 902.
 synthesis of iodine derivatives of (MACALLUM), A., 965.
 mercuriated (LOWRY and TECHNICAL PRODS. CORP.), (P.), B., 108.
- Salves**, preparation of substances for (ENGEL), (P.), B., 852.
- Salvia sclarea*** (wood sage), effect of hydrogen-ion concentration of soil on formation of oil of (H. and H. DEEL), B., 850.
- Salvia spinosa***, oil of, from Cyrenaica (BERLINGOZZI and DI MASE), B., 887.
- Samarium**, ultra-violet spectrum of (GARDINER), A., 774.
 phosphors (TRAVNÍČEK), A., 455.
- Samarium compounds**, isomorphism of, with those of alkaline-earth metals and lead (CAROBBI), A., 14.
- Sambucus nigra*** (alder), chemistry of bark of (ZELLNER), A., 1281.
- Sampling**, theory of (VALLERY), B., 175.
- Sands**, industrial special (WEIGEL), B., 471.
 oil-, extraction of (BAUME and SOC. RECHERCHES ET PERFECTIONNEMENTS IND.), (P.), B., 39.
 separation of oil from (CLARKE and ATHABASCA OIL PRODUCTS, LTD.), (P.), B., 733.
 rammed moulding, determination of porosity of (ESSER and PRIVOVARSKI), B., 522.
- Sand cultures**, nutrient solutions for use with (PRIANISHNIKOV and DOMONTOVITSCH), B., 641.
- Sand paper**, manufacture of (MINNESOTA MINING & MANUF. CO. and OKIE), (P.), B., 661; (KLEIN and BROWN), (P.), B., 948.
- Sandalwood**, colouring matters of (DIETERLE and STEGEMANN), A., 618.
- Sandarac**, examination of (WOLFF), B., 554.
- Sandmeyer reaction**, standardisation of (FRY and GROTE), A., 510.
- Santalin**, constitution and derivatives of (DIETERLE and STEGEMANN), A., 618.
- Santene**, derivatives of (DEUSSEN), A., 1252.
- Santonin**, determination of, in *Artemisia* and in resins (VOGTHERR), B., 510.
 determination of, in pastilles (EDER and SCHNEITER), B., 172.
- Sapogenin**, from *Gypsophila* (KARRER and LIER), A., 401.
- Saponin**, effect of, on hemolysis (MOND), A., 856.
 effect of sugars on hemolysis by (PONDER and KENNEDY), A., 642.
 colour reaction of, with nitrates (MITCHELL), B., 438.
- Saponins** (VAN DER HAAR), A., 522; (WINDAUS), A., 1146; (JACOBS and GUSTUS), A., 1250.
- Saponite** (PALACHE and VASSAR), A., 709.
- Sapphire**, spectroscopic analysis of (WILD and KLEMM), A., 665.
- Sapropelite**, Balkash, artificial petroleum from (ZELINSKI), B., 226.
- Sapwood** (RITTER and FLECK), B., 660.
- Sarcina aurantiaca***, lipochromes of (READER), A., 204.
- Sarcosine anhydride**, compounds of diphenylamine and veronal with (PFEIFFER and ANGERN), A., 739.
- Sarcosine-*N*-carboxylic anhydride** (SIGMUND and WESSELY), A., 960.
 decomposition of (WESSELY and SIGMUND), A., 1235.
- Sarcosylalanine** (LEVENE, SIMMS, and PFALTZ), A., 1265.
- Sarcosylglycylglycine** (LEVENE, SIMMS, and PFALTZ), A., 1265.
- Sardine oil**, hardened, presence of isoacids in (UENO), B., 200.
- Satin white**, chemistry of (FUCHS), B., 987.
- Satureja hortensis***, essential oil of, from Sukhum, Caucasia (KRASILEVSKI), B., 340.
- Satureja nepeta***. See *Calamintha nepeta*.
- Sauerkraut**, variations in mineral content of (PETERSON, ELVEHJEM, and JAMISON), B., 252.
- Sausages**, tinned, water content of (GRONOVER and WOHLNICH), B., 606, 993.
 determination of flour in (SNETHLAGE), B., 963.
- Savory**, summer. See *Satureja hortensis*.
- Sawdust**, action of, on photographic plates after irradiation (LUCAS), A., 586.
 distillation, apparatus for (LEE), (P.), B., 1004.
- Scale**, prevention of (THALHOFFER and A.-G. F. CHEM. IND. IN LIECHTENSTEIN; SCHNETZER and ANTISCALE Co.), (P.), B., 473*.
 on metal surfaces (FREEMAN and ANTISCALE CORP.), (P.), B., 176; (ANTISCALE A.-G. ZUR VERWERTUNG IND. PATENTE), (P.), B., 346.
 prevention and removal of, in boilers (SCHENITZA), (P.), B., 145.
 prevention of adhesion of, in boilers and evaporators (SCHNETZER), (P.), B., 113.
 calcareous, softening of (COZENS and GAS LIGHT & COKE Co.), (P.), B., 424.
- Scandium**, arc spectrum of (PIÑA DE RUBIES), A., 446.
 spark spectrum of (LANG), A., 874.
- Schafarzikite**, crystallography and optical properties of (TOKODY), A., 461.
- Schallerite** (ORCEL), A., 708.

- Scheelite, crystal structure of (VEGARD), A., 663.
determination of foreign elements in (AGTE, BECKER-ROSE, and HEYNE), B., 60.
- Schiff's bases, interaction of isocyanic acid and carbimides with (LANGE), A., 1158.
- Scilla maritima*, active principle of (HENRIJEAN and KOPACZEWSKI), A., 982.
- Scopolamine, pharmacological evaluation of solutions of (KÜHL), A., 212.
- Scorodite, from the Bereznovski mine in the Urals (TSCHIRVA), A., 595.
- Screens, wire, proposed British standard table of (ELLINGTON), B., 471.
- Sculpin. See *Myoxocephalus*.
- Scurvy, experimental, blood-sugar and glycogen in (RANDOIN and MICHAUX), A., 207.
- α -Scymnol, and its oxidation product (OIKAWA), A., 522.
- Seymolsulphuric acid (OIKAWA), A., 522.
- Sea water. See under Water.
- Seaweed, commercial products from (DESCHIENS), B., 630.
paper pulp from (A. J. and H. DE MONTRY), (P.), B., 315.
Japanese (ATSUKI and TOMODA), A., 1280.
- Sebacic acid, methyl ester (NOLLER and ADAMS), A., 712.
- Secretin, isolation of (MELLANBY), A., 1064.
formation and properties of (MELLANBY and HUGGETT), A., 436, 1279.
effect of electrolytes on the nervous mechanism of (ALPERN), A., 858.
- Sediments, source of error in mechanical analysis of (COUTTS and CROWTHER), B., 31, 303*.
- Sedimentation, factors influencing (ROBINSON), B., 807.
hysteresis in (ILJIN), A., 905.
- Seeds, influence of light and temperature on germination of, in absence of calcium (CERIGHELLI), A., 438.
imbibition and oxidation in (JACQUOT and MAYER), A., 208.
drying of (KONDO), B., 764; (ELKINGTON), (P.), B., 1025.
materials for pickling (HOLZVERKÖHLUNGS-IND.), (P.), B., 960.
disinfection of (NIETHAMMER), B., 717.
treatment of, with disinfectants containing mercury (HILGENDORFF), B., 379.
for protection against diseases and pests (FALCK; BEER), (P.), B., 843.
to extract the gum (SOC. ANON. ÉTABL. AUDIBERT), (P.), B., 642.
stimulation of (TAOKE), B., 208.
stimulation and manuring of (MÜLLER), B., 764.
influence of alcohol on growth of (PEARL and ALLEN), A., 438.
effect of calcium salts on germination of (CERIGHELLI), A., 99.
effect of lime on preservation of the germinating power of (KONDO), B., 764.
influence of treatment of, with magnesium chloride and mercury compounds on plant yield (MEYER), B., 416.
porphyrate from (SCHUMM), A., 758.
fat-containing, acetaldehyde from germination of (PIRSCHLE), A., 547.
oxydase and hæmochromogen reactions of (SCHUMM), A., 314.
determination of phospholipins in (GUERRANT), A., 1184.
- Selacholaidic acids (TSUJIMOTO), B., 712.
- Selachoceric acids (TSUJIMOTO), B., 712.
- Selacholeic acids (TSUJIMOTO), B., 712.
- Selachyl alcohol, and its diphthalic ester acid (WEIDEMANN), A., 980.
- Selenic-uronic acid. See under Selenium.
- Selenium, molecular weight of, in pyrosulphuric acid (AUERBACH), A., 791.
recovery of, from lead chamber slimes (STAHL), B., 537.
action of mesothorium radiations on (DEL REGNO), A., 666.
effect of light on thermo-electric power of (HOLMES), A., 1086.
photo-electric conductivity of (GUDDEN and POHL), A., 217.
photosensibility of (KASARNOVSKI), A., 1013.
oxidation potential of (CARTER, BUTLER, and JAMES), A., 687.
thermal properties of modifications of (MONDAIN-MONVAL), A., 800.
calorimetric researches on (MONDAIN-MONVAL), A., 1197.
colloidal (GUTHRIE and KÜHLER), A., 1003.
dispersoid solutions of (AUERBACH), A., 574.
adsorption of crystal-violet on (VAN DER GRINTEN), A., 467.
decomposition of material containing (MANSFELD-A.-G. F. BERGHAU & HÜTTENBETRIEB and WAGENMANN), (P.), B., 539.
action of, on cyanides in liquid ammonia (BERGSTROM), A., 1113.
- Selenium monochloride, properties of (LENHER and KAO), A., 785.
tetrachloride, reaction of copper with (TAYLOR, PRIDEAUX, and POOL), A., 925.
dioxide, action of hydrofluoric acid on (PRIDEAUX and MILLOTT), A., 258.
Selenic-uronic acid (MEYER and KASPER), A., 925.
Selenites, complex double (HAHN, MEIER, and SIEGERT), A., 372.
- Selenium organic compounds (BOGERT and ANDERSEN), A., 311.
aromatic (CHALLENGER, PETERS, and HALÉVY), A., 965.
Selenium ethyl tribromide (SHAW and REID), A., 497.
- Selenium determination and separation:—
determination of small quantities of, in sulphide minerals (SCHMIDT), B., 195.
determination of, with permanganate (SCHRENK and BROWNING), A., 1115.
determination of, in organic compounds (BRADT and LYONS), A., 1266.
separation of arsenic from (FRIDL), A., 702.
- Selenocyanates, aryl (CHALLENGER, PETERS, and HALÉVY), A., 966.
- Selenocyanogen, and its reactions (KAUFMANN and KÜGLER), A., 369.
equilibrium between iodine and, and the corresponding silver salts (BIRCKENBACH and KELLERMANN), A., 30.
- Selenocyano-groups, introduction of, into aromatic compounds (CHALLENGER, PETERS, and HALÉVY), A., 965.
- Semicarbazide hydrochloride, action of amines on (MACUREVITSCH), A., 161.
- Semicarbazide, thio-, action of, on aromatic nitro-compounds (GIUA and PETRONIO), A., 62.
- α -Semicarbazido- β -p-phenoxybenzoylpropionic acid, esters of (RICE), A., 270.
- Semicarbazones, action of hydrazines on (BAIRD and WILSON), A., 1141.
- Semipinacolin transformation (LÉVY), A., 399.
- Semi-solids, feeding of, to chemical apparatus (BERRY), (P.), B., 175.
- Separation of larger from smaller grains of granular substances (CLAUDE), (P.), B., 305*.
of materials of different specific gravities (CHANCE), (P.), B., 33.
of solids by means of liquid currents (REMY), (P.), B., 112.
- Separators for liquids and air or other gases (BINKS), (P.), B., 1000.
centrifugal (HOYLE), (P.), B., 34*; (SCHUELER), (P.), B., 81*;
(SHARPLES SPECIALTY CO.; VAN DER MOLEN), (P.), B., 113;
(MCENTIRE), (P.), B., 224*;
(LAUGHLIN FILTER CORP. and LAUGHLIN), (P.), B., 255, 344, 346*;
(DUHAMEL and COMP. GÉN. DES IND. TEXTILES; SHARPLES SPECIALTY CO., JONES, and AYRES), (P.), B., 343;
(AKTIEBOLAGET SEPARATOR), (P.), B., 391, 392, 615, 856;
(SALCINES), (P.), B., 392;
(BIRCHALL), (P.), B., 472;
(JONES and AYRES; KARPINSKY and ANDERSON), (P.), B., 473*;
(GARLAND, HINCHLEY, and WATSON), (P.), B., 935;
(STURGEON), (P.), B., 936;
(GRIMBLE, CAIRD, and COOMBS; CARTER; FRANCIS), (P.), B., 968;
(THOMSEN; FELDMEIER and BURELL & Co.), (P.), B., 999;
(THOMASSEN), (P.), B., 1000*.
reduction of air currents in (SVENSSON and NORLING), (P.), B., 521*.
cleaning of (DE LAVAL CHADBURN Co. and BAMFORD), (P.), B., 521*.
cleaning bowls of (AKTIEBOLAGET SEPARATOR), (P.), B., 472.
lifting device for bowls of (BAMFORD), (P.), B., 178*.
apparatus for removing material from (VAN DER MOLEN), (P.), B., 81*.
for treating mineral oils (HARVEY and HOLFORD), (P.), B., 526.
horizontal (BEHR), (P.), B., 344.
magnetic ore (HATFIELD), (P.), B., 591*.
- Sericin, colloidal properties of (BROSSA), A., 22.
- Sericite (PALACHE and VASSAR), A., 709.
as a source of potassium in soils (BLANCK and ALTEN), B., 641.
- Serine, action of acids on (BETZIECHE), A., 155.
- Serum, physico-chemical properties of constituents of (VLÈS and DE COULON), A., 191.
effect of alcohol or acetone on physical properties of (FÜRTH, PECHHOLD, and KELLER), A., 242.
surface tension of (DU NOÛY), A., 423.
viscosity of, and nomenclature of serum proteins (ARND and HAFNER), A., 421.
nephelometry of (KABELIK), A., 22.
ultrafiltration of (BRUKNER and UHLENBRUCK), A., 191.

- Serum, inactivation of (FREUND and LUSTIG), A., 423.
 acid-base equilibrium in, in health and disease (PETERS, DULGER, EISENMANN, and LEE), A., 636.
 action of alkaloids with (BEUTNER), A., 1267.
 action of ammonia on complement in (GORDON, WHITEHEAD, and WORMALL), A., 1166.
 effect of diet on anti-pepsin of (PECZENIK and KAWAHARA), A., 1275.
 calcium salts in (NITSCHKE), A., 422.
 condition of calcium in (NITSCHKE and FREYSCHMIDT), A., 1051.
 pathological variations in calcium of (PERCIVAL and STEWART), A., 1180.
 calcium in, in relation to complement (GORDON, WHITEHEAD, and WORMALL), A., 1166.
 relation between calcium and potassium ions in, and vegetative nervous system (LEITES), A., 316.
 cholesterol in (STERN and SUCHANTKE), A., 1054.
 proteolytic enzymes of (FUCHS), A., 536; (FUCHS and v. FALKENHAUSEN), A., 1166.
 complement action of, in relation to opsonin (GORDON, WHITEHEAD, and WORMALL), A., 1166.
 proteins of. See under Proteins.
 sodium in (MICHAELS and KAWAI), A., 192.
 toxicity of, after contact with starch (LUMIERE and COUTURIER), A., 193.
 antidiatheritic, fractionation and removal of proteins from (SÉDALLIAN and LOISELEUR), A., 537.
 antitoxic, electrodiagnosis of (WERNICKE and MODERN), A., 1268.
 human, calcium content of (DI-FOUTSIN), A., 634.
 thiocyanates in (SCHREIBER), A., 192.
 immune, hæmolysis by (PIETTRE), 856.
 hæmolytic, isolation of hæmolysin from (PIETTRE), A., 635.
 normal and immune, sensitisation by proteins of (FREUNDLICH and BECK), A., 316.
 pathological, hæmatin in (SCHUMM), A., 538.
 precipitin reaction for (LAPPONI; DOWNS and GOODNER), A., 1051.
 determination of hydrogen carbonates in (BOUCKAERT), A., 1067.
 determination of globulins in (LEENDERTZ), A., 442.
 determination of salicylic acid in (LOBERG), A., 648.
- Sesquiterpenes (VESTERBERG), A., 731.
 oxidation of, with chromyl chloride and chromic acid (GIBSON, ROBERTSON, and SWORD), A., 299.
- Sewage, fifty years of (WESTON), B., 854.
 treatment of (IMHOFF), (P.), B., 998.
 apparatus for (BOGGIANO-PICO), (P.), B., 902.
 at Manchester (ARDERN), B., 469.
 purification of, by means of activated sludge (STROGANOV), B., 517; (IMHOFF), (P.), B., 614; (IMHOFF, FRIES, and SIERR), (P.), B., 902.
 apparatus for (IMHOFF), (P.), B., 470.
 loss of nitrogen in (CAVEL), (B.), 110.
 on aëro-filters (BAZAKINA), B., 517.
 bacterial filters for (BROWN), (P.), B., 302*.
 plant for (PRÜSS), B., 302, 470.
 sludge tank for (THACKWELL), (P.), B., 1030.
 biological, velocity of dissolution of oxygen as a factor in (BAZAKINA), B., 517.
 chlorination of (ORNSTEIN), B., 854.
 preparation of chlorine water for sterilisation of (I. G. FAR-BENIND.), (P.), B., 934.
 production of gas from (SIERR), B., 78.
 manure from (STÖTZEL), (P.), B., 302.
 diluted, effect of temperature on rate of deoxygenation of (GREENFIELD and ELDER), B., 422.
 influence of soft and hard waters on decomposition of (PURVIS), B., 725.
 disposal of (DALLYN and DE LAPORTE), B., 725.
 at Milwaukee (WILSON), B., 725.
 use of chlorine in (BAKER), B., 389.
 control of, by electrical conductivity and concentration of hydrogen-ions (PARKER), B., 469.
 packing-house, treatment of (MOOR and WAYNE), B., 422.
 town, manurial experiments with (ZIELSTORFF, KELLER, and SPURHMAN), B., 764.
 determination of nitrates in (BURKE), B., 389.
 determination of absorbed oxygen and albuminoid ammonia in (JOHNSON), B., 726.
- Sewage effluents, determination of organic nitrogen in, by modified Kjeldahl method (JOHNSON), B., 806.
 determination of dissolved oxygen in (TROTMAN), B., 613.
 chlorinated, detection of free chlorine in (TIEDEMAN), B., 613.
- Sewage filters, trickling, effect of chlorination on (CONN), B., 693.
- Sewage sludge, heat-drying of (KEEFER), B., 469.
 anaërobic decomposition of (KOROLKOV), B., 806.
 influence of addition of fresh solids to (RUDOLFS, HEUKELEKIAN, and ZELLER), B., 725.
 activated (PEARSE), B., 470.
 experiments with (REDDIE), B., 469.
 partially decomposed, further decomposition of (BACH), (P.), B., 470.
 determination of humus in (BACH), B., 806.
- Sewage tank gases (BUSWELL and STRICKHOUSER), B., 469.
- Sex, Manoiloff's reaction for determination of (ALSTERBERG and HAKANSSON), A., 1267.
- Shale, distillation of (JURA OELSCHNEIDER-WERKE and NAGEL), (P.), B., 861.
 low-temperature distillation of (MATTHAEI), (P.), B., 861.
 Estonian, analysis of (v. PEZOLD), B., 115.
 Holzheim, and oil therefrom (NEUBRONNER), B., 258.
 oil, extraction of (BAUME and Soc. RECHERCHES ET PERFECTIONNEMENTS IND.), (P.), B., 39.
 with tetralin (BERL and SCHMID), B., 652.
 carbonisation of (GARROW), (P.), B., 733*.
 in rotary retorts (FLEISCHMANN), B., 939.
 distillation of (GILMORE and SWINNERTON), B., 116; (AMER. SHALE REDUCTION Co.; FOOSH and ORE ROASTING DEVELOPMENT Co.), (P.), B., 119; (SWINNERTON), B., 697.
 treatment of (FREEMAN), (P.), B., 393.
 retort for (ROTH), (P.), B., 1005.
 utilisation of (SCHWARZENAUER), (P.), B., 862.
 in North Carolina (VILBRANDT), B., 810.
 Karwendel (BERL and SCHMID), B., 306.
 Wurtemberg (GAISSER and BADER), B., 522.
 determination of water in (WOOD and NEALE), B., 36.
- Shale oil, catalysts for cracking of (GRISARD), (P.), B., 231.
 antiknock motor fuels from cracking of (MORRELL and EGLOFF), B., 809.
 treatment of alkaline waste products from refining of (SUDEFELT & Co. and GELBEKE), (P.), B., 526.
 preservation of wood by phenoxides from (WEIDERPASS and KOGERMAN), B., 747.
 Kimmridge, sulphur compounds in (CHALLENGER, HASLAM, BRAMHALL, and WALKDEN), B., 617.
 Norfolk, hydrogenation and desulphurisation of (SHATWELL), B., 226.
 Swedish generator, composition of (HELSSING and TROEDSSON), B., 394.
- Shale retorts. See under Retorts.
- Shark, lecithin from eggs of (PONCE), A., 970.
- Shark liver oil (ROGERS), B., 19.
 fatty acids of (TSUJIMOTO), B., 593, 712.
 alcohols from (WEIDEMANN), A., 980.
- Shattuckite, identity of plancheite and (SCHOEP), A., 143.
- Sheep, maintenance requirements of (WOOD and CAPSTOCK), A., 637.
 effect of addition of mineral salts to diet of (ELLIOT and CRICHTON), B., 251.
 nutritive value of proteins in various tissues of (HOAGLAND and SNIDER), B., 846.
- Sheep dips (McDOUGALL & YALDING and FRYER), (P.), B., 293, 507*.
- Sheep-rot virus, treatment of, with aldehydes (DUCLOUX and CORDIER), B., 930.
- Shellac, apparatus for testing the viscosity of (METROPOLITAN-VICKERS ELECTRICAL Co. and WESTINGHOUSE ELECTRIC & MANUF. Co.), (P.), B., 681.
 substitute for (KUHN and ELLIS), (P.), B., 99.
 artificial (SOC. CHEM. IND. IN BASLE), (P.), B., 67.
 flake orange, U.S. Govt. specification for (U.S. BUR. STANDARDS), B., 450.
 unbleached, dispersion of (SIEMENS & HALSKE, HARRIES, and HAGEL), (P.), B., 451.
 See also Stick-lac.
- Shogaol, structure of (NOMURA and TSURUMI), A., 1145.
- Siderite, thermal decomposition of (HEDVALL), A., 684.

- Silage**, losses in making of (WOODMAN and AMOS), B., 990.
 experiments at Nagpur (ANNETT and AIYER), B., 766.
 production of acids in (SCHMIDT), B., 847.
 sunflowers as crop for (GAINES and NEVENS), B., 296.
 stack, manufacture of (WOODMAN and HANLEY), B., 296.
 determination of free acid in (MAOH and LEPPER), B., 644.
- Silica**. See Silicon dioxide.
- Silica bricks**. See under Bricks.
- Silica glass**. See under Glass.
- Silicic acid**. See under Silicon.
- Silicon**, atomic weight of (BRISCOE and ROBINSON), A., 331;
 (ROBINSON and SMITH), A., 771.
 atomic weight and isotope ratio of (JAEGER), A., 879.
 properties of, and its position in the periodic system (v. ANTHOFF), A., 1078.
 atoms, energy levels of (ALLISON), A., 214.
 spectrum of (LANG and SMITH), A., 649.
 series spectra of (SAWYER and PATON), A., 1.
 production of material containing carbon and (SIEMENS GEBR. & Co.), (P.), B., 322.
 etching agent for, in iron (OBERHOFFER), B., 881.
- Silicon alloys**, manufacture of (STIMSON and BORCHERS), (P.), B., 367; (I. G. FARBENIND. and SCHMIDT), (P.), B., 711*.
 with aluminium (PETT), B., 58; (JEFFRIES, ARCHER, and ALUMINUM Co. of AMERICA), (P.), B., 369; (GWYER and PHILLIPS; STOCKDALE and WILKINSON), B., 830; (GROGAN; OTANI), B., 831; (PACZ and ALUMINUM Co. of AMERICA), (P.), B., 884.
 with aluminium and magnesium, sand-cast (DANIELS), B., 494.
 with chromium and iron (DENECKE), A., 909.
 with copper (DENECKE), (P.), B., 984.
 with iron (PIRAGMÉN), B., 828.
 production of castings of (RHEINISCHE EISENGIESSEREI & MASCHINENFABR.), (P.), B., 282.
 etching colours on (KÖRBER), B., 749.
 magnetic (BROWNE), (P.), B., 282.
 influence of grain size on magnetic properties of (v. AUWERS), B., 324.
 acid-resistant (FISCHER), (P.), B., 547.
 with iron and carbon at high temperatures (BECKER), B., 132*.
- Silicon compounds**, critical temperatures of (PRUDHOMME), A., 785.
 complex (SCHWARZ and SEXAUER), A., 369.
- Silicon carbide** (*carborundum*), structure of (OTT), A., 339, 562.
 production of, from silicic acid and charcoal (REITZ), (P.), B., 916.
 recrystallised, use of, as refractory material (FITZGERALD), B., 947.
- tetrachloride**, structure of (JOOS), A., 111.
 preparation of (BUDNIKOV and SCHILOV), A., 813.
 density and expansion coefficient of (ROBINSON and SMITH), A., 999.
- chlorides** (QUIG and WILKINSON), A., 589.
- hydrides** (STOCK), A., 924.
- nitride**, conversion of, into an easily decomposed form (FRIEDERICH), (P.), B., 191.
- dioxide** (*silica*), properties of various forms of (WATSON), B., 823.
 fused, thermal expansion of (SONDER and HIDNERT), B., 789.
 scrap fused, utilisation of, (WINSHIP and THERMAL SYND., LTD.), (P.), B., 667.
 adsorption by (TESTONI), A., 789.
 and its hydrates (SCHWARZ), A., 1112.
 colloidal, effect of, on availability of phosphates and growth of plants (GILE and SMITH), B., 168.
 gels, manufacture of (CHEM. FABR. SCHERING and KLAPHARE), (P.), B., 487; (CHEM. FABR. SCHERING; I. G. FARBENIND.), (P.), B., 744.
 as filtration agents (HOWELL), A., 932.
 adsorption of alkalis and salts by (PATRICK and BARCLAY), A., 24.
 adsorbent material from (TEITSWORTH and CELITE Co.), (P.), B., 345.
 increase of internal volume of, by moist heat treatment (HOLMES, SULLIVAN, and METCALF), B., 438.
 metallised, catalysis with (REYERSON and THOMAS), A., 1012.
 equilibrium of aluminium oxide, calcium oxide, sodium oxide, and (EITEL), B., 742.
 equilibria in the system lime, alumina, and (GRÜN), B., 323, 324.
 equilibrium of calcium oxide, ferric oxide, and (HANSEN and BOGUE), A., 684.
- Silicon dioxide**, equilibria of manganese oxide, alumina, and, in furnace slags (GLASER), B., 753.
 action of, on metallic sulphates (MARCHAL), A., 487.
 action of, on barium and magnesium sulphates (MARCHAL), B., 51.
 action of, on electrolytes (JOSEPH; JOSEPH and OAKLEY), A., 132; (MUKHERJEE), A., 1112.
 reaction regions for iron, sulphur, and (JORISSEN and ONG-KIEHONG), A., 909.
 action of sulphur monochloride on (BUDNIKOV and SCHILOV), A., 256.
 removal of, from acid ore leaches (HOSENFELD and SIEMENS & HALSKE), (P.), B., 369.
 manufacture of bread containing (SENFTENER), (P.), B., 383.
 joints of, to glass and metal (BUTTOLPH), A., 264.
 soluble, occurrence of, in rocks, and its detection (GRENGG), A., 1221.
 vitreous, manufacture of (BRITISH THOMSON-HOUSTON Co., LTD. and DEVERS), (P.), B., 667*.
 properties of (WINSHIP), B., 947.
- silicates and fluorspar**, analysis of mixtures of (DUBIEL), B., 978.
 determination of, in raw mixture for blast-furnace cement (STRUMPF), B., 408.
- Silicic acid**, preparation of (COLLINS), (P.), B., 88.
 adsorptive preparations of (GOVERS), (P.), B., 53.
 adsorption of acids, bases, and salts by (MEHROTA and DHAR), A., 1002.
 gels (WILLSTÄTTER, KRAUT, and LOBINGER), A., 36.
 structure of (FELLS and FIRTH), A., 995.
 silver chromate rings in (HATSCHKE), A., 349.
 organogels of (FIRTH and PURSE), A., 676.
 sols, constitution of (PAULI and VALKÓ), A., 574.
 properties of alkaline (FREUNDLICH and COHN), A., 677.
 filtration of mineral oils by means of (HERRMANN), (P.), B., 6*.
 determination of, in mixtures of fluorspar, sand, and silicates (DUBIEL), B., 978.
- Silicates** (HÄGG), A., 924.
 scattering of light by solutions of (GANGLY), A., 792.
 production of iron from (TAMMANN and BÄTZ), B., 277.
 base-exchange (WHEATON and AMER. DOUGL Co.), (P.), B., 631*.
 complex, separation of constituents of (SCOFIELD and LA RUE), (P.), B., 89.
 colloidal, in agriculture (GRANVIGNE), B., 1024.
 soluble, influence of, on hypochlorite bleach (CARTER), B., 357.
 insoluble, determination of ferrous oxide in (HACKL), A., 40.
 analysis of (SCHWARZ and SCHINZINGER), B., 319; (CANTONI), B., 359.
- Silicides**, reactions of alkaline-earth oxides with (HEDVALL), A., 368; (HEDVALL and NORSTRÖM), A., 695.
- Silicofluorides**, manufacture of (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 360.
 as insecticides (MARCOVITCH), B., 694.
- Silicon disulphide**, preparation of (TIEDE and THIMANN), A., 1112.
 phosphorescent (TIEDE and THIMANN), A., 1081.
- Silicon organic compounds** (WIDDOWSON), A., 827.
- Silicon-iron**. See under Iron.
- Silk**, structure of fibroin of (BRILL), A., 312.
 chemistry of manufacture of (SCOTT), B., 818.
 bleaching of. See under Bleaching.
 dyeing of. See under Dyeing.
 blue azo-dyes for (NEX and HAEBLER), (P.), B., 658.
 heat of wetting of (HEDGES), A., 1091.
 treatment of (SMITH), (P.), B., 404*.
 washing of (DUHAMEL and COMP. GÉN. IND. TEXTILES), (P.), B., 122, 912.
 chlorination of (SCHWEITZER), (P.), B., 782.
 weighting of (PEPPER), (P.), B., 123, 786; (DEUTS. GAS-CLÜHLICHT-AUER-Ges.), (P.), B., 317; (HERZOG and GONELL), B., 357.
 weighted, improvement of durability of (FÄRBEREI- & APPRE-TURGES. CLAVEL and LINDENMEYER), (P.), B., 123.
 reduction of mineral content of (BRITISH SILK RESEARCH ASSOC., DENHAM, and BRASH), (P.), B., 627.
 separation of cotton material from (TAYLOR and TAYLOR LABORATORIES), (P.), B., 819.

- Silk, artificial, physical structure of, and resistance to enzymes (KARRER), B., 481.
 manufacture of (DREYFUS), (P.), B., 122*; (LUNGE and COURTAULDS), (P.), B., 400; (LAHOUSSE and SOC. FABR. SOIE "RHODIASETA"), (P.), B., 580; (SOC. FABR. SOIE "RHODIASETA"), (P.), B., 627*; (COURTAULDS and WHITTAKER), (P.), B., 782; (LANFRY and BRANDENBERGER), (P.), B., 912.
 apparatus for (LUNGE and COURTAULDS), (P.), B., 316*.
 from nitrocellulose (BINSCHEDLER, JUER, and TUBIZE ARTIFICIAL SILK Co.), (P.), B., 48, 661.
 dyeing of. See under Dyeing.
 spinning of (BASSETT, BANIGAN, and MEIGS, BASSETT, & SLAUGHTER), (P.), B., 48; (BRANDWOOD, STOCKER, and TWYVER WORKS), (P.), B., 580*.
 machines for (WERDOHLER PUMPENFABR. HILLEBRAND), (P.), B., 660; (KOHORN and LEHNER), (P.), B., 1010.
 cuprammonium cellulose solutions for (HÖLKEN), (P.), B., 188.
 load-elongation curves and lustre of (ATSUKI), B., 911.
 tensile strength and elongation of (KRAIS), B., 266.
 strength and elongation of, on wetting (KAMI), B., 944.
 improvement of (KARPLUS), (P.), B., 705*.
 apparatus for treatment of, and other threads (WALKER & SONS and WALKER), (P.), B., 913.
 treatment of, with acids (ELSAESSER, ZUR LÖWEN, and AMER. BEMBERG CORP.), (P.), B., 10*; (WOLFGANG), B., 659.
 to make it resistant to absorption of direct dyes (CHEM. FABR. SANDOZ), (P.), B., 270.
 washing of (PINEL), (P.), B., 269*.
 weighting and decreasing the lustre of (BRUCKHAUS), B., 530.
 increasing the wet strength of (BRUCKHAUS), B., 659.
 swelling of natural cellulose and, in caustic soda (WELTZIEN, GERHARDT, and ZUM TOBEL), B., 737.
 manufacture of fibres of (ALLWATER and HEINEMANN), (P.), B., 782.
 preparation of yarns of (TODA), (P.), B., 975.
 enzymic cleavage of (KARRER, SCHUBERT, and WEHRLI), B., 44; (KARRER and SCHUBERT), B., 945.
 deterioration of, through action of micro-organisms (THAYSEN and BUNKER), B., 234.
 valuation of (BERCHIN), B., 911.
 cellulose, swelling of, in water and caustic alkalis (WELTZIEN), (P.), B., 737.
 cellulose acetate, printing of (SCHNEEVOIGT), B., 662.
 protection of, against action of hot liquors (SILVER SPRINGS BLEACHING & DYEING Co. and HALL), (P.), B., 317.
 comparison of, with German cellulose silk (SCHÜLKE), (P.), B., 737.
 comparison of affinity for, of azo-dyes containing sulphonie, carboxylic, arsenic, and stibinic acid groups (HALL and AISCHÉ), B., 270.
 cuprammonium cellulose, manufacture of (BRYSLKA, LTD. and SCHUBERT), (P.), B., 1009.
 viscose, manufacture of (KÜTTNER), (P.), B., 48; (HAWLIK), (P.), B., 314; (DREAPER), (P.), B., 314, 483*; (HARTOGS), (P.), B., 315; (LUMÈRE), (P.), B., 580; (FAUST and KÄMPF), (P.), B., 913.
 pumps for use in (LUNGE and COURTAULDS), (P.), B., 316*.
 fibres of (ERST BÖHMISCHE KUNSTSEIDE-FABRIK), (P.), B., 704.
 manufacture of very fine threads of (HESSE and RATHERT), (P.), B., 316*.
 treatment of (VISKOSE A.-G., BECKER, and BERNSTEIN), (P.), B., 782.
 in a vacuum (KÄMPF), (P.), B., 436*.
 washing bobbins of (N.V. NEDERLANDSCHE KUNSTZIJDE-FABR.), (P.), B., 317.
 spinning of (HARTOGS; MENDEL and NEIDICH), (P.), B., 533.
 "blinding" of, dyed with insoluble azo-dyes (ROWE), B., 741.
 viscose and cuprammonium, differentiation of (RHODES), B., 187; (KRAIS), B., 579.
 Silk-moth, wild. See *Dictyoploca japonica*.
 Sillimanite, crystal structure of (WYCKOFF, GREIG, and BOWEN), A., 664.
 specific heat of, at low temperatures (SIMON and ZEIDLER), A., 1103.
 mixtures of kaolin and (HOULDSWORTH), B., 239.
 Sillimanite, resistance of, to corrosion by glass (COUSEN, ENGLISH, and TURNER), B., 240.
 in glass furnace practice (CLARK and REES), B., 239.
 commercial, as refractory material (COUSEN and TURNER), B., 239; (COUSEN, ENGLISH, and TURNER), B., 240.
 Sillimanite bricks (HOULDSWORTH), B., 239.
 Siloxen, and its derivatives (KAUTSKY), A., 924.
 Silumin (ÔTANI), B., 831.
 Silver, atomic weight of (RILEY and BAKER), A., 1190.
 in Dartmoor granite (BRAMMALL), A., 594.
 behaviour of platinum metals towards, during cupellation (TRUTHIE), A., 896.
 recovery of copper, gold, and, from ores (WELCH and INTERNAT. PRECIPITATION Co.), (P.), B., 444.
 recovery of lead and, from sulphide ores, etc. (HEX), (P.), B., 330.
 treatment of ores containing manganese and (COOLBAUGH, READ, and COMPLEX ORES RECOVERIES Co.), (P.), B., 97.
 extraction of, from sulphide ores (ELMORE and CHRISTENSEN), (P.), B., 133.
 recovery of, from precipitates in photographic solutions (SEGARRA), (P.), B., 220.
 from photographic fixing baths (CRABTREE and ROSS), B., 933.
 from old photographic films (TRAXL), (P.), B., 300.
 recrystallisation of rolled sheet (GLOCKER, KRUPP, and WIDMANN), B., 15.
 under-water spark spectrum of (BUFFAM and IRETON), A., 1.
 ionised, spectrum of (BEALS), A., 1071.
 ionisation potential of (PICCARDI), A., 876.
 and its alloys with copper and gold, precipitation of radium-F on (TAMMANN and RIENACKER), A., 1190.
 electrical resistance of (MEISSNER), A., 1086.
 deposition of (BART), (P.), B., 369.
 conductivity of electrolytes used in (COLCORD, KERN, and MULLIGAN), B., 494.
 coating of non-conducting material with (DEUTSCHE GAS-GLÜHLICHT-AUER-GES.), (P.), B., 55.
 cleaning of (VALENTIN), (P.), B., 986.
 lattice constant of (BARTH and LUNDE), A., 664, 1195.
 crystals, tensile strength of (ELAM), A., 1085.
 atomic and specific heats of (MAGNUS and HODLER), A., 998.
 powdered, adsorption of gases on (DURAN), A., 898.
 solubility and rate of solution of oxygen in (STEACIE and JOHNSON), A., 1089.
 sputtering of, in hydrogen (GÜNTHER-SCHULZE), A., 1013.
 colloidal, preparation of, by electrolysis (LOTTERMOSER and BAUSCH), A., 351.
 micelles, solution of, by hydrogen peroxide (FODOR), A., 795.
 sols, Bredig, stability and constitution of (PAULI and PERLAK), A., 901.
 antagonism of tin and, in biology (DRZEWINA and BOHN), A., 1274.
 Silver alloys (HEUSLER and ISABELLENHÜTTE GES.M.B.H.), (P.), (P.), B., 675*; (SOC. FRANC. DE MONNAYAGE), (P.), B., 984.
 thermal treatment of (GUILLET and COURNOT), B., 325.
 with aluminium, electrolysis of (KREMANN and DELLACHER), A., 802.
 with aluminium, tin, and zinc, structure of (WESTGREN and PHRAOMÉN), A., 1084.
 with antimony, bismuth, lead, and tin (KREMANN and BAYER), A., 802.
 with beryllium, preparation of (BERYLLIUM CORP. OF AMERICA and COOPER), (P.), B., 952.
 with copper (SCHEIDT'SCHE AFFINERIE), (P.), B., 549.
 with copper and gold (STERNER-RAINER), A., 666.
 with gold, electrolytic refining of (COLCORD), B., 494.
 with lead and zinc (WILLIAMS), B., 93.
 with tin (MURPHY), B., 278, 792*.
 with zinc, electrical conductivity of (PETRENKO), A., 229.
 Silver compounds, tervalent (YOST), A., 251.
 Silver salts, complex, preparation of (MERCK and ROTH), (P.), B., 771.
 photolysis of, in presence of zinc oxide (PERRET), A., 366.
 action of phosphorus on (WALKER), A., 812.
 germicidal suspensions of (SAXL and KRIWATSCHER), (P.), B., 772.
 therapeutic properties of (v. NEERGAARD), A., 92, 200.
 Silver bromide, equilibrium of potassium bromide, water, and (LAMBERT), A., 799.
 grain, behaviour of, during development (DAVIDSON), B., 515.

- Silver bromide grain, visible decomposition of, by light (TRIVELLI and SHEPPARD), B., 173.
 bromide, chloride, and thiocyanate, photochemistry of (SCHWARZ and DIEFFENBACHER), A., 585.
 thalious bromide (BARTH and LUNDE), A., 896.
 carbonate (JEFFREY and WARRINGTON), A., 694.
 dissociation of (CENTNERSZWER and BRUZZI), A., 1107.
 perchlorate, equilibrium of toluene, water, and (HILL and MILLER), A., 26.
 chloride, photochemical decomposition of (HARTUNG), A., 34.
 spheres, study of photographic action with (LIESEGANG), B., 965.
 chromate, condition of, in gelatin (CHATTERJI and DHAR), A., 1203.
 influence of gelatin on precipitation of (BOLAM and MAC-KENZIE), A., 678.
 rings of, in silicic acid gels (HATSCHER), A., 349.
 dichromate, rhythmic precipitation of (DUNIN and SCHEMJAKIN), A., 675.
 gelatinobromide, action of dyes on sensitivity of (GORINI and DANSI), B., 219.
 halides, action of light on (EGGERT), B., 1030.
 comparative spectral sensitivity of, and action of colour sensitizers (EDER), B., 611.
 structure of mixed crystals of (WILSEY), A., 113.
 equilibria of alkali halides with (SHEMTSCHUSHNI), A., 684.
 isomorphism of cuprous halides and (REICHEL), A., 562.
 separation of, electrometrically (BRITTON), A., 39.
 iodide, photochemical decomposition of (HARTUNG), A., 808.
 and its mixtures with silver bromide, spectral sensitivity of (HUSE and MEULENDYKE), B., 611.
 in photoelectric cells (GARRISON), A., 34.
 in photographic emulsions (BALDSIEFEN, SEASE, and RENWICK), B., 466.
 emulsions, grain size of, in relation to theory of exposure (HYLAN), A., 796.
 nitrate, conductivity of solutions of, in organic solvents (MULLER, GRIENGL, and MOLLANG), A., 1212.
 electrometric studies of the reactions of, with alkalis (BRITTON), A., 135.
 thermal dissociation of ammonia compounds of (JIRSA and DIAMANT), A., 1101.
 oxidation of tartaric acid by (MAXTED), A., 1025.
 oxide, solubility of, in mixtures of water and alcohol (KLOSKY and WOO), A., 1089.
 sulphate, equilibrium of aluminium sulphate, water, and (CAVEN and MITCHELL), A., 26.
 sulphide, solid, mobility of ions in (BRAUNE), A., 128.
 sensitisation by nuclei of (SHEPPARD), B., 219.
 alkali thiosulphates, preparation of (CHEM. FABR. SCHLEICH and ROSENHEIM), (P.), B., 321.
 Silver organic compounds with proteins (TAUB, JANSSEN, WESENBERG, and WINTHROP CHEMICAL CO.), (P.), B., 515*.
 Silver-albumose (MANNICH and CURTAZ), B., 214.
 Silver-gelatoses, metallic derivatives (CHEM. FABR. VORM. SCHERING), (P.), B., 771.
 Silver detection, determination, and separation:—
 detection of, in ores (GEILMANN), A., 1019.
 determination of, electrovolumentrically (ZANKO), A., 910.
 determination of, microchemically (FEIGL and POLLAK), A., 1222.
 determination of, in anode slimes (ECKERT), B., 243.
 determination of, in lead (DONATH), A., 791; (EVANS), B., 278.
 determination of, in ore concentrates (DAVIS), B., 589.
 determination of, in photographic emulsions (STEIGMANN; MEIDINGER), B., 387.
 determination of, in silver arsenobenzenes (GAZZANI), B., 107.
 determination of, in zinc retort residues (HASSREIDTER), B., 95.
 separation of gold from, electrolytically (VANOOUKOV), B., 1019.
 separation of lead and (VORTMANN and HECHT), A., 262; (VORTMANN), A., 1019.
 Silver anodes. See under Anodes.
 Sinigrin, enzymic cleavage of (v. EULER and ERIKSSON), A., 542.
 Sinomenine, and its derivatives (GOTO), A., 1160.
 Sinomenium, alkaloids from (H. and T. KONDO), A., 82.
 Sinomenol, and its derivatives (GOTO), A., 1160.
 Sintering pans, circular apparatus for charging (TORULF), (P.), B., 198*.
 Size for textiles (BRITISH CELANESE, RILEY, and AWCOCK), (P.), B., 189.
 resin, analysis of (GOTTLÖBER), B., 314.
 Size softener for textiles (MARSH and AISCHE), (P.), B., 189.
 Sizing materials, growth of mould fungi on (MORRIS), B., 186.
 Skin, absorption of gases by (WALTON and WITHERSPOON), A., 91.
 enzymes of (WOHLGEMUTH and SUGIHARA), A., 93; (WOHLGEMUTH and NAKAMURA), A., 864, 1060; (WOHLGEMUTH and KLOPSTOCK), A., 1060.
 mineral content of (BROWN), A., 969.
 mineral metabolism of (BÖRNSTEIN), A., 862.
 human, cholesterol and phospholipin content of (ECKSTEIN and WILE), A., 969.
 keratin substances in (MENSCHEL), A., 194.
 colour reaction of (SACCARDI), A., 636.
 sulphhydryl reaction of (WALKER), A., 194.
 Skins, theory of bating of (MARRIOTT), B., 682.
 depilation of (BERGMANN), (P.), B., 377; (ULLMAN and BENEFY), (P.), B., 505; (BOURGUIGNON and SOC. DU TEUTRE), (P.), B., 640*.
 unhairing of (ROSS, MARRIS, and WALKER & SONS), (P.), B., 23; (BERGMANN and STATHER), B., 640.
 dressing of (CLERMONT), (P.), B., 683.
 treatment of, prior to tanning (HELL), (P.), B., 839.
 goat, bacteriology of soaking of (McLAUGHLIN and HIGHERBERGER), B., 599.
 hairy, carotting of (BACH), (P.), B., 314.
 sheep, preparation of (McLAUGHLIN and MOORE), B., 599.
 steer, freshly-flayed, structure and properties of (TURLEY), B., 453.
 Slag, treatment of (STOUT), (P.), B., 18.
 apparatus for recovering heat from (BRINGHENTI), (P.), B., 908*.
 granulation of (BOGITCH), B., 547, 883*.
 recovery of metals from (ZANICOLI), (P.), B., 331.
 reactions in (MACNAIR), B., 367*.
 from gas producers and furnaces fired by pulverised coal, manufacture of Portland cement from (POLYSIUS), (P.), B., 363.
 liquid, from gas producers and pulverised fuel furnaces, utilisation of (POLYSIUS EISENGIESSEREI & MASCHINENFABR.), (P.), B., 430.
 basic (McARTHUR), B., 379.
 increasing the phosphorus content of (HILBERT), (P.), B., 833.
 effect of, on lime in soils (WILLIAMS), B., 505.
 Thomas, increase of phosphoric acid content of (HILBERT), (P.), B., 162.
 blast-furnace, thermal investigations on (GRÜN), B., 324.
 latent energy of (GRÜN), B., 324.
 testing the stability of (GUTTMANN), B., 983.
 as building material (GRÜN), B., 276.
 cement from (GRÜN), (P.), B., 276.
 coloured granulated (VAN DE MARK and VULCAN LOUISVILLE SMELTING CO.), (P.), B., 544.
 copper, production of hydraulic cement from (AGDE and ASSMANN), B., 408.
 open-hearth, acid and basic, function of ferric oxide in (WHITELEY), B., 367*.
 sulphur-bearing, manufacture of sulphur dioxide and sulphuric acid from (GEWERKSCHAFT LUTZ 111), (P.), B., 320.
 titanium-containing, articles of (DE SILVA), (P.), B., 543.
 vitreous, porous articles from (NETTEL), (P.), B., 192.
 Sleep, physiology of (KLEITMAN), A., 639.
 effect of, on composition of urine (SIMPSON), A., 540.
 Slurry, treatment of (NEWHOUSE and ALLIS-CHALMERS MANUF. CO.), (P.), B., 709.
 Smectic compounds, structure of (FRIEDEL), A., 340.
 Smelter products, treatment of (KRUPP GRUSONWERK), (P.), B., 833.
 Smithsonite from Rhodesia (MOUNTAIN), A., 816.
 Smoke pollution of city air, measurement of (OWENS), B., 221.
 signals, coloured, production of (RAY), B., 221.
 Smokes (GIBBS), B., 727.
 effect of turbulent air motion and of humidity on the stability of (DRINKER, THOMSON, and FINN), B., 726.
 photometric methods for study and estimation of (DRINKER, THOMSON, and FINN), B., 222.
 Snails. See *Helix*.
 Snow, nitrogen compounds in (SHUTT and HEDLEY), A., 267.
 Soap, manufacture of (WELTER), (P.), B., 21*; (VIDAL), (P.), B., 166, 553; (FULTON and HUTTON), (P.), B., 553; (AISCHE), (P.), B., 795; (BAILY and KIRBY), (P.), B., 954.
 from waste oils and fats (NYDAM), (P.), B., 200.
 containing proteins (HAAS), (P.), B., 136.

- Soap**, boiling of, equilibria in (McBAIN and ELFORD), A., 358.
 reaction velocity in (FINCH and KARIM), (P.), B., 166.
 rancidity and yellowing of (DE BELSUNCE), B., 200.
 atmospheric oxidation of (SMITH and WOOD), B., 713.
 effect of hydrogen-ion concentration on germicidal action of (EGGERTH), B., 954.
 chromium (GRAY), (P.), B., 287.
 curd, bleaching and refining of (SAECHTLING), (P.), B., 887.
 liquid, determination of concentration of, by the immersion refractometer (HOXT and VERWIEBE), B., 678.
 naphthenic (MIKUMO), B., 286.
 perfumed Marseilles (DE BELSUNCE), B., 372.
 phenolated, non-odorless (SULZBERGER), (P.), B., 594.
 solid, manufacture of, containing alcohol (FALCK), (P.), B., 21.
 sulphur, manufacture of (MASCHINENBAU-ANSTALT HUMBOLDT), (P.), B., 449.
 determination of free alkali in (ISMAILSKY), B., 923.
 determination of salt in (DAVIDSOHN), B., 553.
Soap industry, fifty years in (ITNER), B., 837.
Soap powder, manufacture of (GUTTIN), (P.), B., 449*.
Soap solutions, activity coefficient of (RANDALL, McBAIN, and WHITE), A., 1208.
 viscosity of (CLARKE), A., 122.
 viscosity and elasticity of (FREUNDLICH and JONES), A., 471.
 surface properties of (CARRIERE), B., 332.
 adsorption at interfaces between benzene and (DUBRISAY), A., 672.
 purification of (H. and C. HARRIES), (P.), B., 594, 759.
 concentration of electrolytes for salting out of (McBAIN and PITZER), A., 672.
 clouding point of (BRAUN), B., 135, 713.
 measurement of the emulsifying power of (SIMM), B., 759.
 separation of oils from (H. and C. HARRIES), B., 759.
Soda. See Sodium carbonate.
 caustic. See Sodium hydroxide.
Soda ash, pulverised, increasing density of (ASPLUNDH and PITTSBURGH PLATE GLASS Co.), (P.), B., 708.
Soda-orthoclase, zonal growth of, in syenitic magma (IRÔ), A., 934.
Sodamide, action of, on organic compounds (KASIWAGI), A., 728.
Sodium, widening of lines in spectrum of (MINKOWSKI), A., 650.
 spectra of, in comets and in carbon monoxide (LEMON and BOBROVNIKOFF), A., 549.
 absorption spectrum of the vapour of (TRUMPY), A., 101;
 (HOLTSMARK), A., 102;
 (KUHN), A., 985.
 intermittent arc spectrum of (NEWMAN), A., 549.
 vacuum arc spectrum of (NEWMAN), A., 650.
 fluorescence of (PRINGSHEIM), A., 992.
 polarisation of (DATTA), A., 776.
 fluorescence of mixtures of mercury and (RASETTI), A., 776.
 transport numbers of hydrogen and, in mixed chloride solution (TAYLOR), A., 478.
 electrical resistance of, at helium temperatures (WOLTJER and ONNES), A., 565.
 thermal conductivity of (BIDWELL), A., 1087.
 specific heat of, at low temperatures (SIMON and ZEIDLER), A., 1103.
 heats of solution of, in water, weak acids, and alcohols (DE FORCRAND), A., 685.
 vapour, electro-optical properties of (KOFFERMAN and LADENBURG), A., 216, 567.
 extinction of the resonance fluorescence of (MANNKOFF), A., 557.
 absorption of hydrogen by (KAMIEŃSKI), A., 809.
 action of, on alkyl disulphides (MOSES and REID), A., 497.
Sodium alloys, with mercury, electrolysis of (KREMAN, KREIGHAMMER, and GRUBER-REHNBURG), A., 801.
 vapour pressure of (POINDEXTER), A., 897.
Sodium compounds, manufacture of (COCKSEGE and SOLWAY PROCESS Co.), (P.), B., 488*.
Sodium salts, properties of (HACKSPILL and GRANDADAM), A., 569.
 crystallisation of, from silicic acid gels (FELLS and FIRTH), A., 995.
 soluble, separation of (DOLBEAR), (P.), B., 89.
 effect of, on nutritive value of wheat (OLSON and ST. JOHN), A., 197.
 ionisation of, in serum (MICHAELIS and KAWAI), A., 192.
Sodium aluminate as coagulant in water purification (BROWN-STEAD; EDWARDS), B., 342.
 chloroaluminate (*phosgeno-aluminate*) (GERMAN and BROSEL), A., 35.
Sodium azide, preparation of (BROWNE and WILCOXON), A., 487.
 borate (*borax*) manufacture of, from lake brines (LOWRY and WEST END CHEMICAL Co.), (P.), B., 320.
 volatility and dissociation of (BRISCOE and ROBINSON), A., 1007.
 dehydration of (RAKUZIN and BRODSKI), B., 1011.
 etching phenomena with (RINNE and GRÄFE), A., 562.
 recovery of, from saline liquors (GAUGER, STORCH, and BURNHAM CHEMICAL Co.), (P.), B., 273.
 microscopy of beads of (MIKA), A., 1116.
 determination of (WEATHERBY and CHESNY), B., 820.
 perborate, electrolytic preparation of (SBOGI and LENZI), B., 985.
 bromide, dissociation of, in absolute alcohol (DRUCKER and SCHINGNITZ), A., 911.
 dissociation of water in solutions of (HAMED and JAMES), A., 907.
 bromide and chloride, conductivity of ions of (LORENZ and WESTENBERGER), A., 910.
 carbide, thermal dissociation of (GUERNSEY and SHERMAN), A., 246.
 carbonate, manufacture of (LIBBY and NAT. MAGNESIUM MANUF. Co.), (P.), B., 12;
 (SUNDSTROM, TERZIEV, and SOLVAY PROCESS Co.), (P.), B., 488*.
 by the ammonia process (GALT and PITTSBURGH PLATE GLASS Co.), (P.), B., 237.
 manufacture of ammonium chloride and (WACHÉ), (P.), B., 237.
 recovery of, from solutions used in paper manufacture (WALLACE), (P.), B., 401.
 hydrates of (USSANOVITSCH), A., 341.
 dehydration of (RAKUZIN and BRODSKI), B., 1011.
 mixed crystals of sodium sulphate and (ROGERS), A., 664.
 preservation of, during storage (URCHUS), (P.), B., 876.
 action of, on growth of plants (FEHÉR and VÁGI), A., 1066.
 effect of, on acid soils (MÜNSTER), B., 207.
 carbonate and hydroxide, recovery of, from cellulose liquors (TAYLOR), (P.), B., 630.
 carbonate and sulphate, crystallisation of supersaturated solutions of (TANCÖV), A., 788.
 hydrogen carbonate (*sodium bicarbonate*), manufacture of, from lake brines (LOWRY and WEST END CHEMICAL Co.), (P.), B., 320.
 production of ammonium chloride and (GES. F. KOHLEN-TECHNIK), (P.), B., 583.
 decomposition of, by heat (GENTSCH), B., 391.
 compounds of beryllium hydroxide with (BALANDIN), A., 486.
 carbonates, formation of (SUNDSTROM, TERZIEV, and SOLVAY PROCESS Co.), (P.), B., 630.
 chloride (*common salt*), pure, production of (N.V. MATECHU MAATS. TOT EXPLOIT. VAN CHEM. UITVINDINGEN, KRUGER, and UNKEL), (P.), B., 708*.
 from brine (WITTIG), (P.), B., 666;
 (ROBISON and MULKEY SALT Co.), (P.), B., 1013.
 recovery of, from saline liquors (GAUGER, STORCH, and BURNHAM CHEMICAL Co.), (P.), B., 438.
 crude, purification of (KRÜGER and UNKEL), (P.), B., 156;
 (GEWERKSCHAFT EINIGKEIT I), (P.), B., 238.
 powdered, reflexion of X-rays by (HARRIS, BATES, and MACINNES), A., 995.
 insoluble anodes for electrolysis of solutions of (FINK and PAS), B., 497.
 potential differences and equilibrium between Congo-red and, separated by a membrane (AZUMA and KAMEYAMA), A., 122.
 transport number of anion of (LORENZ and WESTENBERGER), A., 1008.
 surface tension of solutions of, and its variation with time (KLEINMANN), A., 900.
 manurial experiments with (LIPMAN, DAVIS, and WEST), B., 1023.
 iodised (v. FELLEBERG), A., 1112.
 separation of, from mixed salts (DOLBEAR), (P.), B., 708.
 See also Rock salt.
 chloride and hydroxide, equilibrium of water and (ANTROPOFF and SOMMER), A., 1209.
 chloride and nitrate, equilibria of barium chloride and nitrate with (FINDLAY and CRUICKSHANK), A., 358.
 chloride and sulphate, equilibrium of, with magnesium chloride and sulphate and water (ROSE), A., 26.
 chromate, manufacture of (YUSHEVICH), B., 537.
 electrolysis of, with a mercury cathode (STISCHERBAKOV and ESSIN), B., 712.

- Sodium, dichromate, manufacture of (POPOV), B., 946.
 fluoride, manufacture of (SIEGEL), (P.), B., 538.
 reflexion of X-rays by (HAYIGHURST), A., 780.
 hydrogen fluoride, crystalline structure of (ANDERSEN and HASSEL), A., 1194.
 halides, viscosity and density of methyl alcohol solutions of (EWART and RAIKES), A., 1000.
 solid, temperature conductance curves of (PHIPPS, LANSING, and COOKE), A., 231.
 hydroxide (*caustic soda*), manufacture of (A.-G. FÜR STICKSTOFF-DÜNGER), (P.), B., 630.
 equilibrium of the formation of, from sodium carbonate, with and without sodium sulphide (GOODWIN; GOODWIN and SILLS), B., 977.
 electrical conductivity and viscosity of (ARNDT and PLOETZ), A., 801.
 equivalent conductivities of solutions of (RAIKES, YORKE, and EWART), A., 477, 579.
 absorption of, from its solutions and from "black liquor" by sulphate-cellulose (KULLGREN), B., 435.
 treatment of solutions of, containing cellulose products (LA SOIE D'AUBENTON Co.), (P.), B., 978.
 separation of, from potassium hydroxide (SOC. CHEM. IND. IN BASLE), (P.), B., 53*.
 hypobromite, reaction of carbamide with (DONALD), A., 54.
 hypochlorite, catalytic decomposition of solutions of, by finely divided metallic oxides (CHIRNOAGA), A., 916.
 deterioration of strong solutions of (WELLS), B., 874.
 hypophosphite, action of stannous chloride on (TERNI and PADOVANI), A., 255.
 hyposulphite, reduction of arsenic compounds by (FARMER and FIRTH), A., 256.
 bleaching of silk with, in alcoholic solution (POKORNY), B., 10.
 periodate, crystal structure of (KIRKPATRICK and DICKINSON), A., 1084.
 iodide, solubility of, in ethyl alcohol (KING and PARTINGTON), A., 236.
 equilibrium of acetone, water, and (MACY and THOMAS), A., 799.
 chloroiridate and chloroplatinate, formation and decomposition of (WÖHLER and BALZ), A., 260.
 niobate, crystal structure of (BARTH), A., 664.
 nitrate (*Chili saltpetre*), production of (I. G. FARBENIND., GRIESSBACH, RÖHRE, and EYER), (P.), B., 744.
 extraction of, from caliche (BROADBRIDGE, SELLERS, and MINERALS SEPARATION N. AMER. CORP.), (P.), B., 488*.
 rhombohedral angle and electrostatic potential energy of crystals of (CHAPMAN, TOPPING, and MORRALL), A., 664.
 ammonolysis of, with sodamide (BROWNE and WILCOXON), A., 487.
 mixtures of ammonium nitrate and, for explosives (DEHN), (P.), B., 221.
 absorption of, by plants (APPLETON and HELMS), A., 871.
 determination of perchlorate in (HOFMANN, HARTMANN, and HOFMANN), B., 292; (LEIMBACH; HAHN), B., 404.
 nitrate and sulphate, equilibria of, in systems with potassium nitrate and sulphate (HAMID), A., 245, 246.
 trinitride, crystal structure of (HENDRICKS and PAULING), A., 113.
 nitrite, manufacture of (MILBAUER), B., 787.
 use of, in curing meat (LEWIS, VOSE, and LOWRY), B., 104.
 oxide, equilibrium of silica, alumina, calcium oxide, and (EITEL), B., 742.
 peroxide, manufacture of (VER. CHEM. & MET. PRODUKTION), (P.), B., 406.
 oxides (KRAUS and WHYTE), A., 921.
 phosphates, reaction of calcium hydroxide with (HAYASHI and MATSUI), A., 1015.
 double phosphite and pyrophosphates (ROSENHEIM, FROMMER, GLÄSER, and HÄNDLER), A., 696.
 plumbite, recovery of, in oil refining (KINSEL), B., 37.
 pyroborate monohydrate (RAKUZIN and NESMEJANOV), A., 260.
 ferropolyphosphate, oxidation with (SMITH and SPOEHR), A., 249.
 reduction of, by dextrose (SPOEHR and SMITH), A., 355.
 polyselenide and polysulphide (BERGSTROM), A., 256.
 silicate, manufacture of (DECKERT), B., 786.
 hydrolysis of (HÄGG), A., 924.
 use of, in printing textiles with vat dyes (LA MANUF. ZUNDEL and LANTZ; BINDER), B., 86.
 Sodium silicates, aqueous solutions of (HARMAN), A., 907.
 transport numbers in aqueous solutions of (HARMAN), A., 478.
 activity of sodium ions in (HARMAN), A., 796.
 viscosity of aqueous solutions of (MAIN), A., 675.
 fluosilicate, poisoning by, and its detection (LÜHRIG), A., 928.
 ammoniostannite (BERGSTROM), A., 254.
 sulphate (*Glauber's salt*), manufacture of (GEWERKSCHAFT BURBACH and WIENERT), (P.), B., 192; (MECKLENBURG), (P.), B., 788; (VEREIN FÜR CHEM. & METALL. PROD.), (P.), B., 946.
 from sodium bisulphate and ammonia (MOLITOR), B., 664.
 anhydrous, manufacture of (RECHA), (P.), B., 487.
 manufacture of ammonium chloride and (WACHÉ), (P.), B., 127, 237.
 mechanical furnaces for (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 273, 360*.
 decahydrate, dissociation pressures and transition point of (MATSUI, NAKAI, ITO, and FUKUSHIMA), A., 1007.
 cryoscopy in (PIERRET), A., 574.
 dehydration of (RAKUZIN and BRODSKI), B., 1011.
 effect of air on the equilibrium of water and (MCILAFFIE), A., 355.
 equilibrium of ethyl alcohol, sulphuric acid, and (DUNNICLIFF, SIKKA, and HOOK), A., 1102.
 mixed crystals of sodium carbonate and (ROGERS), A., 664.
 equilibrium of sodium sulphide, water, and (HOGG), A., 684.
 equilibrium of sodium thiosulphate, water, and (GARRAN), A., 683.
 ammonium sulphate, decomposition of (WACHÉ), (P.), B., 321.
 hydrogen sulphate, action of organic compounds on (DUNNICLIFF and SINGH), A., 1014.
 lanthanum sulphate (ZAMBONINI and CAROBBI), A., 137.
 neodymium sulphates (ZAMBONINI and CAROBBI), A., 255.
 sulphide, manufacture of (Roos & Co.), (P.), B., 126; (DE BÉTHUNE, VAHRENKAMPE, and SOC. NAT. D'IND. CHIM. EN BELGIQUE; BASSETT), (P.), B., 583.
 utilisation of residues from (RIENANIA VER. CHEM. FABR. and MENDHEIM), (P.), B., 192.
 preparation of, in small lumps (CHEM. FABR. KUNHEIM & Co.), (P.), B., 439.
 in granules (Roos & Co.), (P.), B., 583.
 equilibrium of sodium sulphate, water, and (HOGG), A., 684.
 determination of (BUDNIKOV), B., 154, 664.
 trisulphide (DRAYES and TARTAR), A., 809.
 sulphite, effect of ultra-violet light on catalytic oxidation of (MASON and MATHEWS), A., 485.
 velocity of reaction between sulphur and (WATSON and RAJAGOPALAN), A., 363.
 liquors, treatment of waste (DREWSSEN and W. VIRGINIA PULP & PAPER Co.), (P.), B., 49.
 hydrogen sulphite, recovery of, from waste liquors (BEVERIDGE and BEVERIDGE), (P.), B., 49.
 thiosulphate, preparation of (KIRCHHEISEN), (P.), B., 53.
 manufacture of (HOWARD and GRASSELLI CHEMICAL Co.), (P.), B., 237.
 manufacture of *blanc fixe* and (CHEM. FABR. GRÜNAU LANDS-HOFF & MEYER), (P.), B., 333.
 purification of, by crystallisation (WÖHLER and DIERKSEN), B., 190.
 equilibrium of sodium sulphate, water, and (GARRAN), A., 683.
 additive compounds of carbamide and (METZ and METZ LABORATORIES), (P.), B., 609.
 gold thiosulphate (GELARIE and GREENBAUM), A., 926.
 preparation of (MCCLUSKEY and EICHELBERGER), A., 255; (I. G. FARBENIND.), (P.), B., 915.
 trisulphitecobaltate, preparation of (HAHN, MEIER, and SIEGERT), A., 372.
 Sodium organic compounds:—
 Sodium di- and tri-phenylstannides (CHAMBERS and SCHERER), A., 629.
 Sodiumoxyethoxymethylene (SCHEIBLER), A., 711.
 Sodium-2-pyridone (TSCHITSCHENBACHIN and SZOKOV), A., 179.
 Sodium detection and determination:—
 detection of (SCHOORL), A., 814.
 determination of (BARTHE and DUFILHO), B., 644.
 determination of, gravimetrically (CREPAZ), A., 1019.
 determination of, microchemically (TSCHOFF), A., 39.
 Soils, relation between climate and, in Europe (MEYER), B., 684.
 separation of the slimy and colloidal components of, by centrifuging (DUMONT), B., 717.

- Soils, colloidal behaviour of, and their fertility (JOFFE and McLEAN), B., 457.
 anomalous flocculation in (HARDY), B., 292.
 relation of fineness of, to rate of sulphur oxidation (STEPHENSON), B., 762.
 suction force of (JOFFE and McLEAN), B., 717.
 relation of biological processes to concentration of cations in (BURD), B., 101.
 effect of irrigation on reaction of (SCHWÖRER), B., 139.
 effect of plants on reaction of (KRÜGER), B., 207.
 residual effects of neutral salt treatments on reaction of (SPURWAY and AUSTIN), B., 457.
 significance of reaction of, in practical agriculture (TRENEL), B., 457.
 acidity of (GEHRING; MITSCHERLICH), B., 207.
 exchange of ions in relation to (KELLEY and BROWN), B., 601.
 in relation to base exchange (JOFFE and McLEAN), B., 457.
 effect of wood ashes on (MITRA and PHUKAN), B., 1024.
 acidity and hydrogen-ion concentration of (PIERRE), B., 102.
 influence of fertilisers and micro-organisms on hydrogen-ion concentration of (AGNIDES), B., 892.
 showing exchange acidity, experiments on (RÖSSLER), B., 207.
 reaction of, with regard to alkalis (CLARENS), B., 762.
 alkali formation in (ZINK), B., 1023.
 "active" aluminium in (HARDY), B., 1024.
 ammonia content of, and its relation to total nitrogen, nitrates, and soil reaction (HARTER), B., 335.
 base exchange and availability of calcium in (PARKER and PATE), B., 892.
 base exchange in, in relation to origin of coal (TAYLOR), B., 508.
 influence of calcium carbonate on decomposition of organic substances in (TULIN), B., 415.
 reciprocal solubility of calcium and magnesium additions to (MACINTIRE), B., 892.
 solubility and effectiveness of various calcareous dressings for (MANSHARD), B., 1023.
 effect of lime on (WHITE and HOLBEN), B., 800.
 effect of basic slag on lime in (WILLIAMS), B., 505.
 effect of lime treatment of, on outgo of sulphates and nitrates (MACINTIRE), (P.), B., 799.
 lime-requirement and reaction of (TRENEL), B., 558.
 injurious action of large amounts of lime on (BOBKO, GOLUBEV, and TULIN), B., 1024.
 fate of incorporations of lime, limestone, and dolomite in (MACINTIRE and SHAW), B., 892.
 effect of dressing of, with lime and magnesia (MACINTIRE), B., 640.
 decomposition of cellulose in (BARTHEL and BENGTSOON), B., 640; (VINOGRADSKI), B., 975.
 by micro-organisms (WAKSMAN and SKINNER), B., 959.
 influence of available nitrogen on fermentation of cellulose in (ANDERSON), B., 457.
 properties and composition of colloids in (ANDERSON and MATTSON), A., 352.
 colloid content of (BOUYOUCOS), B., 762.
 unusual colloidal (SHAW), B., 24.
 argillaceous colloids of (DEMOLON), B., 991.
 influence of hydration on stability of colloidal suspensions of (WHEETING), B., 102.
 origin and nature of humus in (WAKSMAN), B., 892, 958, 990.
 absorption of iron by (DOYNE and MORISON), B., 958.
 decomposition of farmyard manures in, and their utilisation by plants (BACH), B., 640.
 microbiology of (VINOGRADSKI), B., 684*.
 effect of liming on nitrate content of (REMESOV), B., 415.
 accumulation of nitrate in, under a straw mulch (ALBRECHT and UHLAND), B., 25.
 nitrification in (BATHAM), B., 70; (PARISI), B., 762.
 nitrogen-fixing capacity of (VINOGRADSKI), B., 415, 558.
 multiplication of nitrogen-fixing organisms in (VINOGRADSKI), B., 505.
 nitrogenous and potassium requirements of (NEMEC), B., 926.
 effect of oat straw on fertility of (THOMAS and HARPER), B., 640.
 decomposition of organic matter in (HILL), B., 840.
 phosphate requirements of (v. WRANGEL; v. WRANGEL and KOCH), B., 841; (v. WRANGEL and MEYER), B., 842.
 utilisation of phosphoric acid of (WITYN), B., 250.
 reciprocal action of phosphorite and (LEBEDIANZEV), B., 169.
 availability of potassium in (HALEY), B., 102.
- Soils, effect of potassium in, on carbohydrate metabolism of plants (ENGLIS and LUNT), A., 439.
 potassium fertilisers for, and solubility of potassium compounds (ENGELS), B., 641.
 potassium xanthate as fumigant for (DE ONG), B., 207.
 production and use of sulphates in, as affected by cropping and sulphur treatments (JOHNSTON), B., 457.
 effect of sulphur on microflora of (LIFE), R., 600.
 rate of oxidation of different forms of elementary sulphur in (SIMON and SCHOLLENBERGER), B., 208.
 moisture equivalent of (THOMAS and HARRIS), B., 762.
 relations between moisture constants and determination of vesicular coefficients of (WRIGHT), B., 292.
 evaporation of water from (KEEN, CROWTHER, and COUTTS), B., 202.
 loss of soluble salts in "run-off" water from (DULEY), B., 640.
 influence of replaceable bases on heat of wetting and colloids of (PATE), B., 102.
 heat of wetting of plants in relation to fertility of (McCOOL and ROMAINE), (P.), B., 799.
 residual effects of 40 years' continuous manurial treatment on (WHITE and HOLBEN), B., 25.
 effect of fertilisers on mineral content of (GODDEN), B., 251.
 effect of "asahi promoloid" on (BOTTINI), B., 641.
 effect of tar and tar vapours on (EWERT), B., 378.
 disinfection of (HUNT, O'DONNELL, and MARSHALL), B., 168.
 partially sterilised, action of antiseptics on amœba in (SEWERTZOV), B., 292.
 effect of flooding with sea-water on fertility of (PAGE and WILLIAMS), B., 1023.
 infertility of subsoil in (VAN DER MERWE), B., 990.
 distribution of *Azotobacter* in, in relation to the reaction and the content of calcium carbonate and phosphoric acid (NIKLAS, POSCHENRIEDER, and HOCK), B., 377.
 plate counts of micro-organisms in (SMITH and WORDEN), B., 335.
 effect of treatment of, on draught of ploughs (DULEY and JONES), B., 601.
 core sampler for (POWELL), B., 379*.
 acid, manurial experiments with (MÖLLER-ARNOLD), B., 959.
 aluminium in (LINE), B., 891.
 effect of calcium carbonate, gypsum, and sodium carbonate on (MÜNTER), B., 207.
 acid and non-acid, availability of phosphate fertilisers for (INGHAM), B., 840.
 acid clay, critical hydrogen-ion concentration for formation of hardpan in (SKEEN), B., 24.
 acid Island, infertility of (McGEORGE), B., 169.
 agricultural, determination of phosphoric acid requirements of (NEMEC), B., 763.
 alkali (NEIDIG and MAGNUSON), B., 24, 207.
 theory of the origin of (DE SIGMOND), B., 762.
 base exchange in (KELLEY and BROWN), B., 206.
 durability of cement and concrete in (WILLIAMS and FURLONG), B., 441.
 black, application and action of phosphates in (EGOROV and MACKOV), B., 763.
 Bombay Deccan, nitrogen fixation in (SAHASRABUDDHE and DAJI), B., 249.
 calcareous, determination of available phosphoric acid in (DAS), B., 456.
 cropped, loss of nitrates from (HENDRICK), B., 959.
 crust (BLANK, PASSARGE, and RIESER), B., 681*.
 forest, formation of humus in dead surface layers of (NEMEC), B., 335.
 German arable, phosphoric acid requirements of (LEMMERMANN and WIESSMANN), B., 600.
 humic, titration curves for (HISSINK), B., 558.
 humid-tropical and humid-temperate American, properties of (BENNETT), B., 640.
 loamy and sandy, straw and sawdust in (BARTHEL and BENGTSOON), B., 640.
 magnesian, infertility of (GORDON and LITMAN), B., 1024.
 Minnesota, concentration of carbonates in (McMILLER), B., 799.
 Missouri, studies on (MILLER, BRADFIELD, and DUBLEY), B., 799.
 moor, acidity of (TACKE and ARND), B., 1024.
 muck, effects of lime and potash fertilisers on (LOEHWING), B., 717.

- Soils, Palestine** (BLANCK, PASSARGE, and RIESER), B., 684*.
Podsol, injurious action of calcium carbonate on (TJULIN), B., 415.
red (BLANCK, PASSARGE, and RIESER), B., 684*.
Scotch drift, base exchange in (HENDRICK and NEWLANDS), B., 990.
Transvaal, mechanical analysis of (MARCHAND and VAN DER MERWE), B., 840.
Wisconsin, studies on (ANON.), B., 799.
mechanical analysis of (SUB-COMMITTEE OF AGRIC. EDUCATION ASSOC.), B., 202.
determination of size distribution of particles in (WERNER), B., 31, 336*.
determination of adsorption capacity and degree of saturation of (BOBKO and ASKINASI), B., 415, 1025.
determination of concentration of hydrogen ions in (TRÉNEL), (P.), B., 208, 685* ; (HISSINK and VAN DER SPEK), B., 558.
 by the quinhydrone method (KAPPEN and BELING), B., 1024.
quinhydrone electrode for (BAUER), B., 457.
apparatus for determination of hygroscopicity of (GERICKE), B., 601.
determination of manurial requirements of (BLANCK and ALTEN), B., 70 ; (MITSCHERLICH), B., 70, 378 ; (GÜNTHER), B., 250 ; (HUNNIUS ; DENSCH ; LEMMERMAN ; BLANCK ; NEUBAUER), B., 378 ; (GERLACH), B., 600 ; (HÄHNE ; KRUPPA), B., 1023.
 by means of plant and soil analyses (LANGE), B., 1023.
for potassium and phosphorus (MÖLLER-ARNOLD), B., 24.
determination of incrustated cellulose in (BENGTSSEN), B., 640.
determination of colloids in (DAVIS), B., 102.
determination of nitrates in, by the diphenylamine reaction (RIEHL), B., 1024.
determination of nitrogen requirements of (BLANCK and SCHEFFER), B., 139.
determination of available phosphoric acid in (ENGELS), B., 600.
determination of free sulphur in (SIMON and SCHOLLENBERGER), B., 70.
Soil emulsions, carbon disulphide (FLEMING), B., 800*.
Soil solutions, phosphoric acid content of (V. WRANGELL and HAASE), B., 841.
 influence of lime and phosphate fertilisers on phosphorus content of (PARKER and TIDMORE), B., 763.
Solder (SPEED, FALK, and WESTERN ELECTRIC CO.), (P.), B., 133.
 for aluminium (SCHWALM), (P.), B., 197 ; (DENEYER), (P.), B., 245 ; (DE MAY and PACKARD MOTOR CAR CO.), (P.), B., 590.
 for joining lead alloys to iron, bronze, etc. (METALL-VERARBEITUNGSGES.), (P.), B., 331.
Solids, properties of (FRIEDERICH), A., 16.
 luminescence of (EWLES), A., 455.
 surface tension of (ANTONOV), A., 671.
 density of, with the gas volume-meter (KARNS), A., 707.
 molecular orientation in (SHEARER), A., 1195.
 crystallisation of, from solution (SOC. DES CONDENSEURS DELAS), (P.), B., 650*.
 spreading of, on water (ADAM and JESSOP), A., 348.
 diffusion of (HENRY), A., 895.
 adsorption on, in relation to molecular orientation (GARNER), A., 1091.
 equation of state for (VAN LAAR), A., 570, 894.
 velocity of decomposition of (CENTNERSZWER and BRUŽS), A., 581, 1107 ; (CENTNERSZWER and AWERBUCH), A., 1107.
 treatment of (DE SPIRLET), (P.), B., 473*.
 with liquid reagents (SPICER and DORI CO.), (P.), B., 936.
 apparatus for (PFISTERER), (P.), B., 649.
 apparatus for dissolving of (WOLFF & CO., CZAPEK, and WEINGAND), (P.), B., 303.
 suspended in liquids, machine for emulsification or disintegration of (HURRELL), (P.), B., 223.
 extraction of, by means of volatile solvents (RUSHEN and KRUPP GRÜSONWERKE), (P.), B., 649.
 separation of, by means of liquid currents (REMY), (P.), B., 112.
 separation of, from liquids (LAUGHLIN and LAUGHLIN FILTER CORP.), (P.), B., 568 ; (GEIGER'SCHE FABR. GES.), (P.), B., 616*.
 apparatus for (BEHR), (P.), B., 649.
 feeding of, to chemical apparatus (BERRY), (P.), B., 175.
 interchange of radicals between (HEDVALL and NORSTRÖM), A., 695.
 thermo-balance analysis of changes in, on heating in gases (SAITO), A., 1101.
Solids, reactions of (BALAREV), A., 692 ; (SEMENOV and SCHALNIKOV), A., 1107.
 chemical reactions between, at high temperatures (TAMMANN), A., 921.
 acidic and basic, contraction in formation of (SASLAVSKY), A., 661.
 finely-divided, preparation of (MASCHINENBAU-ANSTALT HUMBOLDT), (P.), B., 177 ; (KOHLSCHÜTTER), (P.), B., 858.
 recovery of, from solutions or suspensions (HONIGMANN), (P.), B., 178.
 non-polar, heat capacity of (SALANT), A., 668.
 total, determination of, in a fermented liquid or carbohydrate solution (ROTTINGER), B., 210.
Solid solutions. See Solutions, solid.
Solid state, complexity of (SMITS and SCHOENMAKER), A., 669, 785.
Sols, formation of, in electrolysis of dilute solutions (JIRSA), A., 1095.
 influence of adsorption on colour of (DHAR), A., 24.
 precipitation of, by multivalent ions (TAYLOR), A., 472.
 colourless, cataphoresis of (DUMANSKI and KNIG), A., 679.
 mastic, effect of potassium chloride on viscosity of (CHAKRAVARTI and DHAR), A., 677.
Solubility (GLASSSTONE and POUND), A., 18 ; (OLIVERI-MANDALÀ), A., 237 ; (OLIVERI-MANDALÀ and CARLI ; OLIVERI-MANDALÀ and FORNI), A., 238.
 determination of (HAHN and BRUNNGÄSSER), A., 672.
 formulae for (MACHELEIDT), A., 467.
 factors determining (BONINO), A., 1208.
 in relation to grain size (BALAREV), A., 344.
 influence of traces of water on (COHEN and VAN DOBBENBURGH), A., 18 ; (COHEN and MIYAKE), A., 466.
 ratios of, and partition coefficients (DHAR), A., 898.
 and adsorption of electrolytes (SCHILOV and TSCHEPPELEVETZKI), A., 1200.
 mutual, of liquids (HILL and MALISOFF), A., 571.
 in binary mixed liquids (DISSELKAMP), A., 1089.
 of isomeric organic compounds (COLLETT and JOHNSTON), A., 237.
 of salts in water, effect of non-electrolytes on (MCAULAY), A., 1089.
 of sparingly soluble substances (MITCHELL), A., 787.
 ionised, inter-ionic attraction theory of (BAXTER), A., 474 ; (SHERILL and NOYES), A., 1006.
Solutions, apparatus for production of (BENDIXEN, McKECHNIE, and REID), (P.), B., 2.
 decolourisation and purification of (INTERNAT. SUGAR & ALCOHOL CO.), (P.), B., 256.
 concentration of, by freezing (JOHNSON), (P.), B., 425.
 apparatus for (BRINGENTI), (P.), B., 776.
 separation of solid constituents of (MCLEOD), (P.), B., 521*.
 absorption spectra of, in relation to charge of the molecules (SCHEIBE, RÖMER, and RÖSSLER), A., 774.
 infra-red spectra of (REINKOBER), A., 108.
 existence of free electrons in (DOCHMANN), A., 906.
 influence of acetonitrile on the electrokinetic potential of (ARND), A., 248.
 accurate measurement of electrical conductivity of (MORGAN and LAMBERT), A., 686.
 specific heat of (DE KOLOSOVSKI), A., 236.
 theory of specific heat of (ZWICKY), A., 668.
 molecular contraction in, at different temperatures (RAKSHIT), A., 788.
 temperature of vapour evolved from (REISSMANN), A., 787.
 heat of dilution of (BJERRUM), A., 476.
 compressibility of (KAR), A., 118.
 osmotic pressure of (LEVALT-EZERSKI), A., 120, 571.
 adsorption from (BANCELIN), A., 19 ; (CHARRIOU), A., 899.
 adsorption on large molecules in (MARINESCO), A., 673.
 surface tension and adsorptive forces in (REHBINDER), A., 674.
 diffusion in (FÜRTH), A., 21.
 adhesion in (SCHILOV and NEKRASSOV), A., 20 ; (DUBININ), A., 1090 ; (SCHILOV and TSCHEPPELEVETZKI), A., 1200.
 inter-traction in (WRIGHT), A., 901.
 expression for the true reaction of (GIRIBALDO), A., 125 ; (RICHTER), A., 1007.
 alcoholic, influence of ionic charge on osmotic behaviour of (FRIVOLD), A., 1100.
 aqueous, formation of sols in electrolysis of (JIRSA), A., 1095.
 dielectric polarisation of (EBERT), A., 906.
 reaction of (KOLTHOFF), A., 571.

- Solutions**, concentrated, theory of (LINARD, A., 475; (WILKE), A., 906; (HEITLER), A., 1006.
neutral salt action in (GRUBE and SCHMID), A., 474.
non-aqueous, electrochemistry of (MÜLLER, GRIENGL, and MOLLANG), A., 1212.
determination of transition points in (MASON and MATHEWS), A., 127.
Nernst's osmotic theory applied to (BRODSKY), A., 247.
solid, thermal anomalies of (CHEVENARD), A., 1001.
strong, theory of (DESSART), A., 464.
supersaturated (FISCHER, STEIKMAN, and DOMBROWSKI), A., 703.
effect of α -particles on (RICHARDS), A., 1190.
unstable, apparatus for evaporation of (GÄDE and STRAUB), A., 211.
determination of acidity or alkalinity of, electrometrically (TRÉNEL), (P.), B., 685*.
- Solvates**, formation of (BURR), A., 1207.
- Solvatochromism** (FISCHER), A., 949.
- Solvents**, operation of plants for recovery of (OBERFELL), (P.), B., 521.
electrostriction of (WEBB), A., 1208.
wetting power of, and their evaporation (VOLLMANN), B., 955.
distribution of substances between (PERSCHKE), A., 345.
selective action of (WRIGHT), A., 787.
partition of mixtures between immiscible (PERSCHKE and TSCHUPAROV), A., 345.
for increasing the drying capacity of oils and varnishes (LUGEON), (P.), B., 248.
for organic substances (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 248.
organic, heats of fusion of (MITSUKURI), A., 568.
evaporation of (BOLLMANN), (P.), B., 999.
"two-type," for lacquers (KEYES), B., 67.
volatile, recovery of (IRONSIDE), (P.), B., 345; (BRÉGEAT), (P.), B., 616.
determination of, in paints and varnishes (WOLFF), B., 136.
- Somatoid structures** (KOHLSCHÜTTER and EGO), A., 14; (KOHLSCHÜTTER, BOBTELSKY, and EGO), A., 15.
- Sonchus olerensis*, constituents of (STERN and ZELLNER), A., 646.
- d-Sorbitol*, oxidation of (EVANS and HOLL), A., 149.
- Soret effect** (CHIPMAN), A., 1206.
- Sound**, velocity of, in relation to heat of vaporisation (IONESCO), A., 341.
in mixed gases (DIXON and GREENWOOD), A., 16.
in liquids, in relation to latent heat of vaporisation (SATTERLY), A., 785.
- Soup preparations**, determination of creatinine in (MÜLLER), B., 765.
- Soya beans**, nutrition value of, for nitrogen equilibrium (ROSE and MACLEOD), A., 428.
phosphatides of (LEVENE and ROLF), A., 982.
decomposition of proteins of (MASHINO), A., 1048.
influence of calcium and nitrogen on protein metabolism of (GINSBURG and SHIVE), B., 959.
urease content of (HINDMARSH), A., 1282.
effect of feeding with, on blood (HORVATH), A., 861.
liquid fuel from distillation of the calcium soap of (SATO and TSENG), B., 731.
utilisation of, for paints, sizes, and adhesives (JOHNSON), (P.), B., 22.
- Soya bean oil**, hydrogenated, surface tension and lathering power of soaps from (HIROSE), B., 887.
analysis of (PFAHLER), B., 413.
detection of linseed oil in (CARRIÈRE), B., 678.
- α -Sparteine methiodide**, preparation of (MERCK and DÜTZMANN), (P.), B., 464.
- Specific gravity**. See Density.
- Specific heat**. See Heat.
- Spectra**, structure of (UHLENBECK and GOUDSMIT; LAPORTE and MEGGERS), A., 215; (THOMAS; KRONIG), A., 448.
and atomic structure (McLENNAN, McLAY, and SMITH), A., 874.
general rules of (BECHERT and CATALÁN), A., 873.
broadening of lines in (MENSING), A., 2.
origin of doublets in (HOUSTON), A., 1070.
separation of multiplet terms in (BICHOWSKY and UREY), A., 447.
excitation of (ROBERTSON), A., 550.
by electron collisions (HERTZ), A., 331.
- Spectra**, and the correspondence principle (KUDAR), A., 451; (TOLMAN and BADGER), A., 45, 555.
of atoms of the same electronic structure (HARTREE), A., 935.
of stripped atoms, doublets in (GIBBS and WHITE), A., 874, 1071.
of stripped atoms of the first long period (GIBBS and WHITE), A., 1185.
of the striated discharge in mixed gases (KEYS and HOME), A., 765.
of diatomic molecules (FUES), A., 1078.
of elements of low atomic numbers, K_{α} doublets in (BOSE), A., 650.
of elements of the iron series (CATALÁN), A., 1.
of exploding wires (DÉCHÈNE), A., 446.
of metals, excitation of (TERADA and NAKAYA), A., 1069.
of gases, excitation of, by chemical means (FRÄNZ and KALLMANN), A., 109.
of rare gases (HICKS), A., 1186.
of metals of the second group (SAHA), A., 1186.
of excited nitrogen compounds (KNESER), A., 658.
absorption, refractivity, and ionisation potential (MORTON and RIDING), A., 558.
variations in, with polarisation of light (v. ANGERER and JOOS), A., 1080.
influence of nuclei on (PURVIS), A., 108.
and tautomerism (MORTON and ROGERS), A., 9, 454; (MORTON and ROSNEY), A., 454.
of coloured alkali halides (FLECHSIG), A., 658.
of gases in the Schumann region (LEIFSON), A., 991.
of condensed nuclear hydrocarbons (CAPPER and MARSH), A., 557.
of pigments, effect of various solvents on (SZILÁRD), A., 557.
of rare-earth minerals (BECQUEREL, ONNES, and DE HAAS), A., 14.
of solutions in relation to distribution of charge of molecules (SCHEIBE, RÖMER, and RÖSSLER), A., 774.
high-frequency (BRUNETTI), A., 215.
infra-red, of cyclic compounds (LECOMTE), A., 884.
of ethers and esters (SMITH and BOORD), A., 775.
of organic ammonia derivatives (BELL), A., 222.
of organic compounds (ELLIS), A., 454, 883.
 K -series (POSEJAL), A., 216.
discontinuity of (RICHTMYER), A., 216.
ultra-violet (McLENNAN and McLAY), A., 8.
of aldehydes (SCHOU), A., 556.
of carboxylic acids, and their salts and esters (LEY and HÜNECKE), A., 556.
of cyclic compounds, influence of hydrogen-ion concentration on (STENSTRÖM and REINHARD), A., 10.
of hydrides (HULTHÉN and ZUMSTEIN), A., 882.
of organic compounds of the 4-pyridone type (RIEGEL and REINHARD), A., 734.
arc (WILLIAMS), A., 215; (RAYLEIGH), A., 876.
origin of spectral terms of (BREIT), A., 938.
high-current (KING), A., 447.
high-vacuum, in hydrogen (NEWMAN), A., 1069.
arc and spark, appearance of lines in (BEAMS), A., 1069.
calculation of ground terms of (LAPORTE), A., 1185.
band, structure of, in relation to electronic structure (MULLIKEN), A., 451, 452, 657, 1079.
quantum theory of (BURGE), A., 1192.
quantum transitions in (LEMON and BLACKBURN), A., 109.
electron levels of (MECKE), A., 657.
intensity of lines in (KEMBLE; SEWIG), A., 223.
alternating intensities in (SLATER), A., 452.
of molecules with one valency electron (MULLIKEN), A., 8.
infra-red, of diatomic gases (KEMBLE and BOURGIN), A., 658.
comet-tail (LEMON; BLACKBURN), A., 1079.
continuous, theory of (KLEEMAN), A., 2.
doublet, theory of (KUDAR), A., 329.
electrodeless discharge, effect of ultra-violet light and X-rays on (FOLEY), A., 109.
infra-red emission, of gaseous explosions (GARNER, JOHNSON, and SAUNDERS), A., 658.
 K -emission, of elements tin to hafnium (CORK and STEPHENSON), A., 651.
of elements from tantalum to bismuth (STEPHENSON and CORK), A., 446.
explosion (HORI), A., 652.
flame (EISENSCHUTZ and REIS), A., 556.
and chemical reaction (BLEEKER), A., 657.

- Spectra, infra-red** (DANIELS), A., 108.
 of solutions (REINKOBER), A., 108.
 line, transformation of, into continuous spectra (RAY), A., 1192.
 coloured photographs of (SCHAEFER and BORMUTH), A., 2.
 luminescence, of Geissler tubes (BJELOPOLSKI), A., 109.
 molecular (DENNISON), A., 222.
 phenomena in (HUND), A., 657.
 optical, doublets and triplets in (HARTREE), A., 7.
 γ -ray, number of particles in (GURNEY), A., 990.
 γ -ray (THIBAUD), A., 6, 333.
 distribution of intensity in (SKOBEŁTZYN), A., 1077.
 secondary (PICCARD; THIBAUD), A., 106.
 Röntgen ray (THORÉUS), A., 329; (DAUVILLIER), A., 875.
 intensity distribution of lines in (RICHTMYER; NISHINA and RAY), A., 103.
 intensity of lines in, with reference to excitation voltage (STUMPEN), A., 447.
 effect of chemical combination on (BÄCKLIN), A., 987.
 direct reading (NICHOLAS), A., 215.
 of elements copper to lanthanum (COSTER and MULDER), A., 987.
 of lubricants (TRILLAT), B., 349.
 determination of structure and orientation of long-chain compounds by means of (TRILLAT), A., 890.
 quantitative analysis by means of (GÜNTHER and WILCKE), A., 663.
 absorption, structure of (CHAMBERLAIN), A., 2.
 continuous, theory of (VALLARTA), A., 215.
 ultra-violet (DAUVILLIER), A., 649.
 series, effect of an electric field on lines in (STARK), A., 103.
 relative intensities in (HOYT), A., 106.
 spark, influence of self-inductance and dilution on (WILLIAMS), A., 104.
 condensed (HULBERT), A., 1079.
 under-water, of the platinum metals (CLARK and COHEN), A., 766.
 vacuum, of heavy metals (CARROLL), A., 214.
 Tesla-luminescence (McVICKER, MARSH, and STEWART), A., 222.
 ultra-violet, standard wave-lengths for use in (SMITH and LANG), A., 873.
 use of diffraction gratings for (THIBAUD), A., 651.
 vacuum tube, reversal in (MERTON), A., 1185.
 vibration, of diatomic molecules (FUES), A., 881.
Spectral apparatus of high light intensity (SCHAUM and KRAEMER), A., 1020.
Spectral lines, fine structure of (BRONSTEIN), A., 765.
 photometry of (HEINRICH), A., 649.
 intensity of (HÖNL), A., 550.
 thermodynamics of intensity of (HEITLER), A., 554.
 occurrence of harmonics in (NAGAOKA and FUTAGAMI), A., 1069.
Spectral series, magnitude of terms of (UNSÖLD), A., 550.
Spectrochemistry of nitrogen compounds (v. AUWERS and KRAUT), A., 109; (v. AUWERS and ERNST), A., 994.
 infra-red (BOVINO), A., 775.
Spectrograph with a non-inclined plate (SÈVE), A., 142.
 glass-quartz (LEISS), A., 447.
 γ -ray (PICCARD), A., 106.
 Röntgen-ray (CLARK, BRUGMANN, and ARORN), A., 706; (NORTON), A., 1020.
 vacuum grating (LANG and SMITH), A., 649.
Spectrometer, infra-red (LEISS), A., 447.
 large reflecting (LEISS), A., 765.
 Röntgen-ray (CLARK, WEBER, and HERSHEY), A., 41.
 high-vacuum Röntgen-ray (SIEGBAHN and THORÉUS), A., 1020.
 infra-red (LEISS), A., 1185.
Spectrophotography, measurement of high temperatures by (GRIFFITH), B., 79.
Spectrophotometer, direct comparison, neutral wedge for (TERRY), A., 1118.
Spectrophotometry by great dispersion (FRERICHS), A., 223.
 photographic (DORGELO), A., 109; (KELLNER), A., 483.
Spectro-polarimeter for ultra-violet photography (COTTON and DESCAMPS), A., 142.
Spectroscope, inferential (NAGAOKA and MISHIMA), A., 1118.
Spectroscopic analysis, use of magnesium electrodes in (DUREVIL), A., 593.
Spectroscopy, extreme ultra-violet (LYMAN), A., 556.
Spectrum analysis, method for (SCHÜLER), A., 215.
 quantitative (SEBOR), A., 590.
 Speiss, leaching of, with nitric acid (SIXT), B., 16.
Spermaceti (ANDRÉ and FRANÇOIS), B., 247.
 aliphatic alcohols from (ANDRÉ and FRANÇOIS), B., 987.
Spermatozoa, agglutination of, by reagents (KALVARIJSKI), A., 540.
 oxydases in (SERENI), A., 95.
Sperm oil (ANDRÉ and FRANÇOIS), B., 247.
 constitution of unsaturated acid from (TSUJIMOTO), B., 636.
Spermine (DUDLEY and ROSENHEIM), A., 194; (WREDE), A., 751.
 constitution of (DUDLEY, ROSENHEIM, and STARLING), A., 1128.
 constitution and methylation of (DUDLEY and ROSENHEIM), A., 308.
Spheres, sub-microscopic, determination of size, mass, and charge of (EHRENFHART and WASSER), A., 888.
Spices, determination of crude fibre in (OTTE and WEISS), B., 690.
 determination of essential oils in (GRIEBEL), B., 850.
Spinacene. See Squalene.
Spinach, antirachitic value of (CHICK and ROSCOE; BOAS), A., 437.
Spirits, loss of alcohol from, on keeping (LÜHRIG), B., 295.
 distilled, determination of alcohol in (WILLIAMS), B., 845.
Spiritus Aetheris Nitrosi, determination of nitrites in (RAE), B., 75.
Spirochæta cytophaga, action of, on cellulose (VINOGRADSKI), B., 975.
Spleen, relation of, to metabolism (A. and L. PALLADIN), A., 90.
 synthesis of cholesterol by (ABELOUS and SOULA), A., 204.
Spodumene, alteration of, in the Etta mine, South Dakota (SCHWARTZ and LEONARD), A., 379.
 spectroscopic analysis of (WILD and KLEMM), A., 708.
Sponges, artificial, from cellulose esters (MOSTNY), (P.), B., 122*.
Sprays, plant, improvement of the wetting power of (Soc. CHIM. USINES DU RHÔNE), (P.), B., 103.
 containing copper for combating vine-pests (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 103.
 combined lead arsenate and lime-sulphur (THATCHER and STREETER), B., 103.
 lime-sulphur-calcium arsenate (GOODWIN and MARTIN), B., 990.
Spray liquids, physics of (WOODMAN), B., 139.
 for prevention of plant diseases (RIEDEL A.-G.; FALCK; BEER), (P.), B., 843.
Spray materials, spreaders for (ROBINSON), B., 30.
Spruce lignin (FRIEDRICH and DIWALD), B., 151.
Spruce wood (URBAN), B., 531.
 wetting of, with calcium and magnesium bisulphite liquors (SCHWALBE and BERNDT), B., 531.
 digestion of, with nitric acid (ROUTALA and SEVON), B., 818.
Sputum, constituents of (REINWEIN), A., 1052.
Squalene, constitution of, and its identity with spinacene (HEILBRON, KAMM, and OWENS), A., 816.
 feeding experiments with (CHANNON), A., 638.
Stability, chemical, factors determining (HILDEBRAND), A., 362.
Stadenic acid, and its trimethyl ester (WINDAUS), A., 724.
Stains, manufacture of, from soft lignite (EIHRENBORG, WIEDERHOLD, KRUG, HOLDSBOER, FISCHER, and STUDIENGES. F. AUSBÄU DER IND.), (P.), B., 414.
Staining, vital, effect of alkaloids and salts on (BORNSTEIN and RÜTER), A., 316.
Stalagmometry, kinetics of reactions by means of (BENRATH and others), A., 363.
 "Stand oil," apparent paradox of plasticity of (DE WAELE), B., 391.
Stannous salts. See under Tin.
Stars, velocity of ions in the atmosphere of (JOHNSON), A., 654.
 nitrogen in (BAXANDALL), A., 445.
Star-anise oil, distinction between anise oil and (ZIMMERMANN), B., 298; (DRIESSEN MAREEUW), B., 768.
Starch (PRINGSHEIM and STEINGROEFER; PRINGSHEIM, LEIBOWITZ, PEREWOSKY, and KUSENACK; PRINGSHEIM and SCHAFFRO), A., 715; (PRINGSHEIM and LEIBOWITZ), A., 1123.
 structure of, and its methyl derivatives (IRVINE and MACDONALD), A., 823.
 isolation of, from oleaginous materials (DAVID and FÉLIZAT), (P.), B., 1020*.
 synthesis of, in plants, in presence of sodium and calcium salts (ILJIN), A., 439.
 manufacture of (WIDMER and PENICK & FORD), (P.), B., 642.
 preparations of calcium chloride and (HENKEL & Co.), (P.), B., 561.

- Starch**, purification of (PRUCHA, WIDMER, and PENICK & FORD), (P.), B., 562.
- grains, action of polarised light on (BALY and SEMMENS), A., 34; (RAYLEIGH; JONES), A., 135.
- adsorption by (LIEPATOV), A., 571, 789.
- boiled, adsorption of water by dried films of (SWAN), B., 992.
- velocity of adsorption of alkali hydroxides by (LIEPATOV), A., 673.
- behaviour of kinds of, towards dyes and iodine (HUEBNER and VENKATARAMAN), B., 436.
- liquefaction of (PETIT and RICHARD), A., 502.
- comparison of the liquefying action of various substances on (HALLER and HOHMANN), B., 686.
- deposits of, in green leaves (LUBIMENKO), A., 647.
- breaking-down of, in mesophyll and guard cells (STRUGGER and WEBER), A., 99.
- disintegration of (ALSBERG), B., 336.
- distillation of, in presence of hydrogen under pressure and catalysts (FRIEZ-DAVID and HANNIG), B., 35.
- hydrolysis of, by acids (NANJI and BEAZELEY), B., 685.
- by amylase of germinated barley (EADIE), A., 1174.
- by α -diastase (SYNIEVSKI), A., 93.
- by polarised light (SEMMENS), A., 694.
- by salts and protein degradation products (TAKANE), A., 1059.
- by takadiastase (MASLOW and DAVISON), A., 757.
- saccharification of, by Japanese acid clay (KOBAYASHI and YAMAMOTO), A., 1015.
- formation of dextrin from, by malt amylase (CHRZASZCZ, BIDZINSKI, and KRAUSE), A., 93.
- glucose residues in (KUHN and ZIESE), A., 1230.
- action of iodine on (SAMEC and KLEMEN), A., 22.
- action of dyes, bromine, and iodine, on different kinds of (HUEBNER and VENKATARAMAN), B., 1025.
- manufacture of conversion products of (WIDMER and PENICK & FORD), (P.), B., 561.
- maize, unsaturated fatty acids from hydrolysis of (TAYLOR and LEHRMANN), B., 686.
- maize and potato, value of, in textile finishing (EKHARD), B., 706.
- sweet potato, in cornflour and arrowroot (STUBBS), B., 800.
- soluble, molecular weight of (PICTET), A., 387.
- thin-boiling, manufacture of (MACMILLAN and NIAGARA ALKALI Co.), (P.), B., 210.
- determination of, by calcium chloride (CHABOT), B., 642.
- determination of, in pectin and apple juices (ECKART and DIEM), B., 688.
- separation of amyloses in (TAYLOR and IDDLES), B., 717.
- Starch**, nitro-, finely-divided, drying (BRONSTEIN and TROJAN POWDER Co.), (P.), B., 341.
- Starch iodide**, determination of iodine in, by the radiometer (FIELD and BAAS-BECKING), A., 590.
- Starch products**, manufacture of (SINGER), (P.), B., 210.
- soluble (HALLER and CHEM. FABR. PYRGOS), (P.), B., 103*.
- Starch solutions**, preparation of, not precipitated by basic salts (PERL & Co.), (P.), B., 642.
- for use in iodometric analysis (ALSBERG, GRIFFING, and FIELD), A., 701.
- Starch syrup**, determination of, in stroop (KRUISHEER), B., 963.
- Starfish**, activation of eggs of, by acids (LILLIE), A., 755.
- Stark effect** (FOSTER), A., 2; (THOMAS), A., 3, 217; (KIUTI), A., 103; (DEPPERMAN), A., 653; (WALLER; EPSTEIN and FOSTER), A., 987.
- in relation to Schrödinger's quantum theory (EPSTEIN), A., 1187.
- Starvation**, effect of carbohydrates on ketosis of (GOLDBLATT), A., 198.
- Steam**, generation of (NIEDERBAYERISCHE CELLULOSEWERKE A.-G. and SCHNEIDER), (P.), B., 967.
- letting off, from containers (FARB. v. BAYER & Co.), (P.), B., 473*.
- automatic means for, from a vessel containing a boiling liquid (FARB. v. BAYER & Co.), (P.), B., 304.
- production of hydrogen from, in a hot boiler tube (PORTER), B., 255.
- superheated, regulation of temperature of (FARB. v. BAYER & Co.), (P.), B., 425.
- See also Water vapour.
- Steam accumulators**, regenerative (MÜLLER and HEINRICH), (P.), B., 224*.
- Steam generators**, utilisation of combustion products in (G. & J. WEIR and WEIR), (P.), B., 223.
- Stearic acid**, magnesium salt, preparation of (STERKERS and BREDEAU), A., 792.
- potassium salt, action of glycerol- α -iodohydrin with (GRÜN and LIMPÄCHER), A., 596.
- sodium salt, conductivity and hydroxyl-ion concentration in gels of (v. BUZAGN), A., 123.
- thallous salt (CHRISTIE and MENZIES), A., 56.
- esters (ABDERHALDEN, PAFFRATH, and SICKEL), A., 97.
- wax esters of (GRÜN, ULBRICH, and KREZIL), A., 597.
- Stearic acid**, dibromodiodo-, iodohydroxy-, and diiododihydroxy-, calcium salts (HOLDE and GORGAS), A., 269.
- 1-hydroxy-, distillation products of (VESELY and MAJTL), A., 47.
- ethyl ester, influence of, on acidosis (WEST and BENEDICT), A., 196.
- Stearic acids**, dihydroxy-, isomerism of (HILDITCH), A., 938.
- Stearolactone**, preparation of (BLUMENSTOCK), A., 597.
- Stearolic acid**, crystallisation of (MÜLLER), A., 665.
- hydration of (G. M. and R. ROBINSON), A., 1024.
- hydrogenation of (GONZÁLEZ), A., 712.
- β -Stearyl dichlorohydrin (WHITLEY), A., 819.
- Stearylglycido** (ZETTSCHKE and AESCHLINMANN), A., 1225.
- Steel**. See under Iron.
- Stellite**, properties of (SCHULZ, JENGE, and BAUERFELD), B., 492.
- Stencil sheets** (HORII), (P.), B., 534, 627.
- Sterculia diversifolia*. See "Kurrajong."
- Stereochemistry**, studies in (HOLMBERG), A., 384, 937, 939.
- geometrical principles of (WEISSENBERG), A., 934.
- of molecular structure (REIS), A., 934.
- of aromatic compounds (KUHN and ZUMSTEIN), A., 513.
- Stereoisomerism** and dielectric constants of ethylenic compounds (ERRERA and LEFINGOLE), A., 777.
- Stercum purpureum*, enzymes of (MAYO), A., 982.
- Steric hindrance** and isomerism (VAVON, ANZIANI, and HERYNK), A., 1033; (VAVON and PEIGNIER), A., 1042.
- Steric series** (FREUDENBERG and NOÉ), A., 53.
- Sterilisation** of colloidal materials (MILLS), (P.), B., 28.
- Sterilising agents**, manufacture of (HAROLD), (P.), B., 302; (HAROLD and UNITED WATER SOFTENERS), (P.), B., 518*, 726.
- Sterols** (SCHMID and STÖHR), A., 949.
- irradiated, antirachitic properties of (ROSENHEIM and WEBSTER), A., 870.
- Stibacetic**, chloro- (BRAHMACHARI and DAS), A., 541.
- Stibiobismuthinite** (QUERCIGN), A., 1022.
- Stick-lac** from various sources (TSCHIRCH and SCHÄFER), B., 99.
- Stilbene**, photochemical action of bromine on (GHOSH and PURKAYESTHA), A., 366.
- Stilbene**, diamino- and dinitro-derivatives, asymmetrically substituted (HARRISON), A., 827.
- 3:4'-diamino-, and its derivatives, and 3:4'-dinitro-, dibromide (HARRISON), A., 827.
- α -chlorodinitro- and 3:4'-dinitro-, and its dichloride (HARRISON and WOOD), A., 604.
- tetranitro-, action of sunlight on (PLISSOV), A., 1029.
- Stilbenes**, polymitro- (PASTAK), A., 392.
- Stilbene series**, *as*-diamino- and -dinitro-derivatives (HARRISON and WOOD), A., 604.
- Stills** (DE BAJLIGETHY), (P.), B., 82; (YOUNG), (P.), B., 567.
- air-cooled (BALLMAN and CASSIDY), (P.), B., 425.
- oil (PRIMROSE and POWER SPECIALTY Co.), (P.), B., 479*; (BEHMER and TEXAS Co.), (P.), B., 623; (MATHER), (P.), B., 733*.
- operation of (BELL and SINCLAIR REFINING Co.), (P.), B., 397.
- removal of aluminium chloride residues from (McAFEE and GULF REFINING Co.), (P.), B., 431.
- heating system for (WELLMAN and KANSAS CITY GASOLINE Co.), (P.), B., 478.
- continuous refluxing (TRUMBLE), (P.), B., 700.
- pressure (PYZEL and SIMPLEX REFINING Co.), (P.), B., 397; (HUMPHREYS and STANDARD OIL Co.), (P.), B., 622.
- tubular (SIMS and BROOKS), (P.), B., 574.
- oil-coking (JENSON), (P.), B., 864.

- Still, oil-cracking (SINCLAIR REFINING CO. and BELL), (P.), B., 40; (BAGWILL), (P.), B., 41; (SINCLAIR REFINING CO.), (P.), B., 120.
controlling supply of steam and oil to (GREENSTREET and GASOLINE CORP.), (P.), B., 623.
mineral oil (NEWTON), (P.), B., 183.
petroleum (YOUNG and TEXAS CO.), (P.), B., 182; (HUSTED and ROUNSEVELL), (P.), B., 908.
- Stirring, influence of rate of, on reaction velocity (HUBER and REID), B., 519.
- Stomach, gaseous equilibria in (McIVOR, REDFIELD, and BENEDICT), A., 537.
dog's, atropine-like substance from (SABALITSCHKA and BOLDT), A., 91.
infants', enzymes of (WALTHER), A., 636.
analysis of gases in (A. D. and F. L. DUNN), A., 1068.
- Stone, preservation of (LAURIE), (P.), B., 15*, 544*.
cleaning and preservation of (MARSH), (P.), B., 1015.
artificial (LUKENS and SOLIDIFIER CORP.), (P.), B., 56; (JAKOB), (P.), B., 130; (MORIN-KROP), (P.), B., 275.
production of, from boiler slag, dust slag, or ashes (KÖRBER and HESSEL), (P.), B., 441*.
manufacture of (SUNDELL; ERIKSSON), (P.), B., 981.
composition for manufacture of (BACKHOUSE and OLIVER), (P.), B., 1015.
for abrasive purposes (CARBORUNDUM CO.), (P.), B., 918*.
finely-crushed, production of (HACK and BURT), (P.), B., 55.
natural and artificial, hardening and preservation of (DE ROS and BARTON), (P.), B., 1015.
- Straw, fibrous material from (WEST VIRGINIA PULP & PAPER CO. and DREWSSEN), (P.), B., 739.
bleaching of. See under Bleaching.
effect of, on plant growth (COLLISON and CONN), B., 416.
effect of manuring with, on yield of crops (GERLACH), B., 139.
- Straw board, removal of moisture from (TASKER), (P.), B., 913.
pulp, production of (RUE and MOUSSON), B., 400.
- Street waste. See under Waste.
- Streptococci, action of, on milk (GORINI), B., 418.
Streptothrix corallinus, lipochrome of (READER), A., 204.
- Strontium salts, preparation of, pure (RAQUET), B., 629.
- Strontium chloroaluminate (*phosgeno-aluminate*) (GERMANN and BIROSEL), A., 35.
carbonate, manufacture of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 192.
hydroxide, production of (RHENANIA VEREIN CHEM. FABR. and STUER), B., 946.
oxide, preparation of (CHEM. FABR. COSWIG-ANHALT and v. DIETERICH), (P.), B., 13.
oxide, melting point of (SCHUMACHER), A., 340.
sulphate, precipitation of (LAMBERT and HUME-ROTHERY), A., 1209.
conversion of, into other strontium compounds (ROTHER and BRENEK), (P.), B., 787.
vanadate (EPHRAIM and BECK), A., 371.
- Strontium detection and determination:—
detection of, in presence of calcium (RAQUET), A., 262.
detection and determination of, spectroscopically (MEUNIER), A., 703.
detection and determination of, in sea water (DESGREZ and MEUNIER), A., 1222.
determination of, microchemically (STREBINGER and MANDL), A., 1222.
determination of, in presence of calcium (ARND and HAFNER), A., 1063.
- Stroop, determination of sugars and starch syrup in (KRUISHEER), B., 963.
- Strophanthidin (WINDAUS, REVEREY, and SCHWIEGER), A., 73.
oxidation products of (JACOBS and COLLINS), A., 73.
- Strophanthin (JACOBS and COLLINS), A., 73; (JACOBS and HOFFMANN), A., 982.
crystalline Kombe (JACOBS and HOFFMANN), A., 618.
- Strophanthin-B, Kombe, and its tetra-acetyl derivative (JACOBS and HOFFMANN), A., 618.
- Strychnine, detection of (ALOY, VALDIGUIÉ, and ALOY), A., 850.
determination of, with iodo-eosin as indicator (DOTT), B., 419.
determination of, in poisoned grains (ELMORE), B., 614.
- Strychnine-N-oxide, and its benzoate (POLONOVSKI), A., 1160.
- Strychnos alkaloids (LEUCHS and SCHMIEDER), A., 418.
extraction of solutions of (WATKINS and PALKIN), B., 963.
- Strychnos nux vomica*, alkaloid content of, during germination (SABALITSCHKA and JUNGEMANN), A., 440.
- Surgeon liver oil (TSUJIMOTO), B., 636.
- Styptics (DOWNS), (P.), B., 173.
- Styrene and its homologues, manufacture of (NAUGATUCK CHEMICAL CO., OSTROMISLENSKI, and SHEPARD), (P.), B., 299.
polymerisation of (NAUGATUCK CHEMICAL CO. and OSTROMISLENSKI; NAUGATUCK CHEMICAL CO., OSTROMISLENSKI, and GIBBONS), (P.), B., 451.
- Styrene, 4-bromodinitro-, and 4-chlorodinitro- (VAN DER LEE), A., 1245.
 ω -dinitro-, reduction of (VAN DER LEE), A., 179.
- Styrylactic acid, potassium salt and derivatives of (LINSTEAD and WILLIAMS), A., 1245.
- Styrylacetone, and its semicarbazone (LINSTEAD and WILLIAMS), A., 1245.
- Styryl alkyl ketones, isomerism of (MCGOOKIN and SINCLAIR), A., 69, 838.
- Styrylbenzopyrylium salts (HEILBRON and ZAKI), A., 1042.
- Styryl ethyl ketone, 2-hydroxy-, isomerism of (MCGOOKIN and SINCLAIR), A., 69.
- Styrylglyoxylic acid, β -bromo-, and its methyl ester (REIMER), A., 1139.
- Styryl n -hexyl ketone, 2-hydroxy- (MCGOOKIN and SINCLAIR), A., 69.
- 2-Styryl-3-methylbenzopyrylium salts and acetyl derivative, hydroxy-2-*op*-dihydroxy- (DILTNEY, BERRES, HÖLTERHOFF, and WÜBKEN), A., 1255.
perchlorate, 2-*o*-hydroxy- (LÖWENSTEIN and KATZ), A., 956.
chloride, *o*-hydroxy-, and its derivatives (DILTNEY, BERRES, HÖLTERHOFF, and WÜBKEN), A., 1254.
- 2-Styryl-3-methyl- β -naphthapyrylium perchlorate, 2-*o*-hydroxy- (DILTNEY, BERRES, HÖLTERHOFF, and WÜBKEN), A., 1255.
- Styryl n -propyl ketone, 2-hydroxy- (MCGOOKIN and SINCLAIR), A., 69.
- Styrylpyrylium salts (ATKINSON and HEILBRON), A., 620.
- 2-Styrylquinoline, derivatives of, and their antiseptic properties (BROWNING, COHEN, ELLINGWORTH, and GULBRANSEN), A., 1153.
- 9-Styrylxanthylium chloride, 4'-mono- and 3:4':6'-tri-hydroxy- (ATKINSON and HEILBRON), A., 620.
- Sub-electrons (DAECKE), A., 554; (MATTAUCH; EHRENSHAFT), A., 880; (REGENER), A., 1191.
- Suberic acid, *aa'*-dibromo-, and *aa'*-dihydroxy- (GOSS and INGOLD), A., 821.
- Substance, $C_8N_2S_4$, from 2:5-dithiol-1:3:4-thiodiazole and thiocarbonyl chloride (RAY and GUHA), A., 744.
 $C_8H_4N_2S_3$, from 2:5-dithiol-1:3:4-thiodiazole and ethylene dibromide (RAY and GUHA), A., 744.
 $C_8H_8O_2N_2$, from glycylglycine and diphenylamine (ABDERHALDEN and HAAS), A., 716.
 $C_4H_5N_2BrS_3$, from 2:5-dithiol-1:3:4-thiodiazole and ethylene dibromide (RAY and GUHA), A., 744.
 $C_8H_5N_2S_3$, from 2:5-dithiol-1:3:4-thiodiazole and thiocarbonyl chloride (RAY and GUHA), A., 744.
 $C_8H_4Br_8$, from unsaturated hydrocarbons from decomposition of mineral oils (EVERS), B., 308.
 $C_8H_5O_2N_2$, from nitration of glycosine (LEHMSTEDT), B., 7.
 $C_8H_{11}O_2N_2$, from blood (HUNTER and EAGLES), A., 85.
 $C_8H_3N_2Cl_2Sb$, from diazotisation of 4-chloro-3-aminophenyldichlorostibine hydrochloride (SCHMIDT and HOFFMANN), A., 533.
 $C_8H_{12}S_2PtCl_4$, from 1:4-dithian and platinum chloride (RAY and BOSE-RAY), A., 1023.
 $C_8H_5ON_2Cl_2As$, from precipitation of $C_8H_4ON_2Cl_2As$ with ether (SCHMIDT and HOFFMANN), A., 533.
 $C_8H_4ON_2Cl_2As$, from diazotised 3-amino-4-hydroxyphenylarsinic acid (SCHMIDT and HOFFMANN), A., 533.
 $C_8H_5O_4$, from oxidation of hematoporphyrin dimethyl ether and subsequent hydrolysis (KÜSTER, MAURER, and PALM), A., 713.
 $C_8H_{10}O$, from extracts of cotton plant (POWER and CHESNUT), B., 991.
 $C_8H_8O_2$, from $\alpha\beta$ -dihydroxy- β -methylpropane and sulphuric acid (DOLGORUKOVA-DOBRIANSKA), A., 818.
 $C_8H_4N_2S_3$, from 2:5-dithiol-1:3:4-thiodiazole and benzylidene chloride (RAY and GUHA), A., 744.

Substance, $C_8H_9O_2N$, from nitration of acetylisoercosol (GULLAND and ROBINSON), A., 1035.

$C_{10}H_{11}O_5N$, from nitration of acetylisoercosol (GULLAND and ROBINSON), A., 1035.

$C_{11}H_8N_2S_8$, from 2:5-dithiol-1:3:4-thiadiazole and benzylidene chloride (RAY and GUHA), A., 744.

$C_{11}H_{11}O_4N_2Br_2$, from formaldehyde and 4-methylthiouracil (POETSCH and BEHREND), A., 739.

$C_{11}H_{10}O_4N_2S_2$, from formaldehyde and 4-methylthiouracil (POETSCH and BEHREND), A., 739.

$C_{12}H_5N_3I_6$, from 3:4:5-tri-iodoaniline (KALB, SCHWEIZER, ZELLNER, and BERTHOLD), A., 1152.

$C_{12}H_{10}O_5N_2$, and its derivatives, by oxidation of 2:4-dimethylpyrrole (PIERONI and VEREMEENCO), A., 1157.

$C_{12}H_7ON_4I$, from 2:3-diaminophenazine and iodic acid (HUGEL), A., 183.

$C_{12}H_{11}O_2N_2Br$, from *o*-aminodiphenylamine and bromic acid (HUGEL), A., 183.

$C_{12}H_{11}O_2N_2I$, and its derivatives, from *o*-aminodiphenylamine and iodic acid (HUGEL), A., 183.

$C_{13}H_{10}ON_2$, from hydrolysis of anthranilamide (REISSERT and LEMMER), A., 528.

$C_{13}H_{10}O_6N_2ClP$, from phosphorus pentachloride and 2-chloro-5-nitrobenzophenoneoxime (MEISENHEIMER, ZIMMERMANN, and v. KUMMER), A., 405.

$C_{13}H_{10}O_6N_2BrP$, from phosphorus pentachloride and 2-bromo-5-nitrobenzophenoneoxime (MEISENHEIMER, ZIMMERMANN, and v. KUMMER), A., 405.

$C_{14}H_{15}S_2$, and its salts, from action of sulphur on elemol (RUZICKA and PFEIFFER), A., 1148.

$C_{14}H_{15}O_4N_2$, from hydrolysis of caseinogen, structure of, and its salts and derivatives (ABDERHALDEN and SICKEL), A., 748.

$C_{15}H_9O_2$, from β -methylantraquinone (SCHAARSCHMIDT and LEWYEFF), B., 625.

$C_{15}H_{21}O$, and its semicarbazone, from oxidation of cedrene (GIBSON, ROBERTSON, and SWORD), A., 299.

$C_{15}H_8O_4N$, from anthraquinoneisoxazole (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 149.

$C_{15}H_{20}O_6Hg$, from mercury acetate and eugenolacetic acid (FARW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 218.

$C_{16}H_{16}O_4N_4$, from 2:4-dimethoxy-1-ethylbenzene and diazotised 2:4-dinitroaniline (SKRAUP and BÖHM), A., 722.

$C_{16}H_{20}O_3N_2$, from 2-benzylidencyclohexanone and ethyl sodio-malonate (VORLÄNDER and KUNZE), A., 1144.

$C_{16}H_{25}O_3N_2$, from ester hydrochloride of leucylglycyl-leucine (ABDERHALDEN and SCHWAB), A., 1260.

$C_{17}H_{20}O$, from α - Δ^1 -cyclohexenylacetophenone and ethyl sodio-acetoacetate (FARROW and KON), A., 1040.

$C_{17}H_{22}O_2$, from reduction of salicylidene-*dl*-piperitone (EARL and READ), A., 1040.

$C_{17}H_9O_2N$, from condensation of indole with triketohydrindene (TOMITA and FUKAGAWA), A., 1257.

$C_{18}H_{12}O$, from phenyl- α -naphthylacetyl chloride, aluminium chloride, and benzene (MCKENZIE and TATTERSALL), A., 65.

$C_{18}H_{22}O_2N_2$, and its derivatives, from acetone and β -phenyl-hydroxylamine (BANFIELD and KENYON), A., 828.

$C_{18}H_{22}O_2N_2$, from reduction of ethyl $\alpha\alpha'$ -dipiperidinoadipate (v. BRAUN and MÜNCH), A., 1122.

$C_{18}H_{19}O_9N_2S$, from reduction of nitrohomoveratrolediazonium sulphate (GULLAND and ROBINSON), A., 1035.

$C_{18}H_{22}O_6$, from 3:4-dimethoxybenzyl bromide and phloracetophenone dimethyl ether (FREUDENBERG, CARRARA, and COHN), A., 74.

$C_{18}H_{15}OCl_2$, from heating $\alpha\gamma$ -diketo- $\alpha\gamma$ -di-*p*-chlorophenylheptane (SKRAUP and GUGGENHEIMER), A., 171.

$C_{19}H_{18}O_4NI$, from berberine, phloroglucinol, and sulphuric acid (SPÄTH and QUIETENSKY), A., 82.

$C_{20}H_{14}O_6$, and its derivatives, from resorcinol and benzoyl cyanide (BORSCHKE and WALTER), A., 515.

$C_{20}H_{16}O_{10}$, from 2:3-dihydroxy-2:3-dihydro-1:4-benzoquinone (TERRY and MILAS), A., 1249.

$C_{20}H_{20}O_2$, from benzaldehyde and 2-methylcyclopentanone (CORNUBERT and BORREL), A., 953.

$C_{20}H_{15}N_2I$, from di-2-quinolymethane and methylene iodide (SCHEIBE and FISCHER), A., 528.

$C_{20}H_{24}O_3N_4$, and its derivatives, from pyridine, cyanogen bromide, and ethyl 2:4-dimethylpyrrole-3-carboxylate (FISCHER and ERNST), A., 411.

$C_{21}H_{17}N_2I$, from di-2-quinolymethane, ethylene dibromide, and potassium iodide (SCHEIBE and FISCHER), A., 528.

Substance, $C_{21}H_{22}O_3N_2$, from oxidation of ethyl phenylamino-acetate (GOLDSCHMIDT and BEUSCHEL), A., 607.

$C_{21}H_{26}O_6N_2Cl$, from 6:9-diamino-2-ethoxyacridine and galactose (SCHNORF and HEFTI), (P.), B., 341.

$C_{22}H_{36}O$, from bark of walnut tree (ZELLNER), A., 646.

$C_{22}H_{18}O_4N_2$, from 3-phenyl-2-benzylidene (BETZIECHE and EIRLICH), A., 1234.

$C_{22}H_{38}O_3N_4$, from heating *N*-*dl*-leucyl-*dl*- α -amino- δ -hydroxy-valeric acid with phosphorus pentoxide (ABDERHALDEN and SICKEL), A., 748.

$C_{22}H_{26}O_9NCl$, by action of hydrochloric acid on narcotine (DRUMMOND and McMILLAN), A., 1263.

$C_{22}H_{40}O_2$, from bark of *Sambucus nigra* (ZELLNER), A., 1281.

$C_{21}H_{12}O_2$, from bark of plane tree (ZELLNER), A., 646.

$C_{21}H_{22}O_{13}$, from 2:3-dihydroxy-2:3-dihydro-1:4-benzoquinone (TERRY and MILAS), A., 1249.

$C_{24}H_{26}O_2$, from thujone and benzaldehyde (CORNUBERT and BORREL), A., 953.

$C_{24}H_{30}O_4$, from hydrogenation of acenaphthenequinone (SKITA), A., 174.

$C_{25}H_{46}O_4$, from *Digitalis* leaves (CLOETTA), A., 755.

$C_{25}H_{22}O_2N_2$, from γ -ethoxy- α -phenyl- Δ^8 -buten- α -one, benzoyl chloride, and pyridine (v. AUWERS and STUHLMANN), A., 741.

$C_{25}H_{18}O_2N_2$, from 5:5'-dimethylindigotin (POSNER, STOCKEN-SCHNEIDER, NEUMANN, NACHRING, MEYER, and BEISSNER), A., 1155.

$C_{26}H_{22}N_8$, from *as*-triphenylguanidine and aniline (KLINGNER), A., 945.

$C_{26}H_{26}O_2N_2$, from hydroxycodone and 6-aminopiperonal (GULLAND and ROBINSON), A., 83.

$C_{27}H_{29}N_3$, and its oxalate, from 2-methylquinoline and Michler's hydrol (HUMPHRIES), A., 414.

$C_{27}H_{46}O$, from reduction of cholesterol (FISCHER and TREIBS), A., 400.

$C_{27}H_{30}O_2N_6$, from pyridine, cyanogen bromide, and 3-acetyl-2:4-dimethylpyrrole (FISCHER and ERNST), A., 411.

$C_{28}H_{22}O_2$, from benzaldehyde and 6-benzyl-2-methylcyclohexanone (CORNUBERT and BORREL), A., 953.

$C_{28}H_{22}O_2$, from α - Δ^1 -cyclohexenylacetophenone and sodium ethoxide (FARROW and KON), A., 1040.

$C_{29}H_{22}O_2$, from benzylidenediphenylmaleide and magnesium phenyl bromide (LÖWENBERG and ULLICH), A., 171.

$C_{29}H_{34}N_3I$, from 2:6-dimethylquinoline methiodide and Michler's hydrol (HUMPHRIES), A., 414.

$C_{30}H_{21}ON_3Br$, from tri-2-quinolymethane and ethylene bromide (SCHEIBE and FISCHER), A., 528.

$C_{35}H_{25}N_4$, from benzaldehyde and benzylbenzimidazole (SKRAUP and BÖHM), A., 722.

$C_{35}H_{24}N_3I$, from triquinolymethane and benzylidene chloride (SCHEIBE and FISCHER), A., 528.

$C_{35}H_{26}N_3Cl_3$, from triquinolymethane and benzylidene chloride (SCHEIBE and FISCHER), A., 528.

$C_{35}H_{27}N_3Cl_2$, from benzyl chloride and triquinolymethane (SCHEIBE and FISCHER), A., 528.

$C_{39}H_{68}O_2$, from bark of *Fagus silvatica* (ZELLNER), A., 1281.

$C_{41}H_{72}O_2$, from bark of *Lingustrum vulgare* (ZELLNER), A., 1281.

$C_{42}H_{82}O_7$, from potassium stearate and glycerol- α -iodohydrin (GRÜN and LIMPÄCHER), A., 596.

Substitution, influence of, on equilibria in binary systems (KREMAN, WEBER, and ZECHNER), A., 393; (KREMAN and ZECHNER), A., 394, 396.

in aromatic compounds (BARNETT, COOK, and MATTHEWS), A., 295; (FRANCIS, ANDREWS, and JOHNSTON; FRANCIS), A., 828; (FLÜRSCHHEIM and HOLMES), A., 830; (BARNETT, MATTHEWS, and WILTSHIRE), A., 1030.

with reference to the theory of alternate polarities (OLIVIER and BERGER), A., 1239.

directive power of groups in (ALLAN and ROBINSON), A., 396; (OXFORD and ROBINSON; ROBINSON and SMITH; ALLAN, OXFORD, ROBINSON, and SMITH; LEA and ROBINSON), A., 397.

directive efficiency of oxygen and fluorine in (HOLMES and INGOLD), A., 831.

directive efficiency of oxygen and nitrogen in (C. K. and E. H. INGOLD), A., 833.

directive efficiency of oxygen and sulphur in (HOLMES and C. K. and E. H. INGOLD), A., 947.

influence of nitro-groups on (KENNER, TOD, and WITHAM), A., 58.

with halogenohydrins (GRÜN and LIMPÄCHER), A., 596.

- Succinamic acids, β -chloro- (HOLMBERG), A., 937.
 Succinamide, thiol- (LEVENE and MIKESKA), A., 1225.
 Succinilic acid *o*-disulphide (BOGERT and STULL), A., 310.
 Succinic acid, thallous salt (CHRISTIE and MENZIES), A., 56.
 benzyl- ψ -thiocarbamide salt (RUGELEY and JOHNSON), A., 147.
 alkyl halogen esters (CONTZEN-CROWET), A., 938.
n-diamyl and *n*-dibutyl esters (CONTZEN-CROWET), A., 938.
 ethylene ester, decomposition of, by heat (TILITSCHIEV), A., 713.
 aryl derivatives, radical dissociation of (LÖWENBEIN and GAGARIN), A., 168.
dl-Succinic acid, amino-, propionyl derivative, methyl ester (BERGMANN, KANN, and MIEKLEY), A., 1235.
 Succinic acids, diamino-, configuration of, and their salts (KUHN and ZUMSTEIN), A., 505.
 Succinic anhydride, amino-, acetyl derivative (BERGMANN, STERN, and WITTE), A., 1236.
p-Succinimidobenzoic acid, ethyl ester (GORI), A., 1037.
 Succinonitrile, condensation of resorcinol with (MURAI), A., 951.
 Succus entericus, effect of extirpation of the pancreas on secretion of (KOSKOWSKI and IVY), A., 426.
 Sucrose (*saccharose*; *cane-sugar*), structure of (HAWORTH and HIRST; MCOWAN), A., 941.
 enzymic production of, from sucrosephosphates (NEUBERG and BEHRENS), A., 542.
 recovery of, from molasses (PAINE, WALTON, and BIRCKNER), (P.), B., 337.
 optical and electrical constants of (PALUMBO), A., 784.
 potential of hydrochloric acid solutions containing (SCATCHARD), A., 911.
 specific heat of (HÜTTIG and WEHLING), A., 1103.
 heat of dilution of solutions of (HUNTER), A., 1103.
 surface tension of solutions of (HONIG), A., 790.
 solubility of, in impure solutions (ROBART), B., 169.
 molecular condition of, in aqueous solution (NAKHMANOVICH), A., 906.
 crystallisation of (WATERMAN and GENTIL), B., 764.
 influence of salts on (KUSNETZOV), B., 336.
 kinetics of inversion of (PENNYCUICK), A., 249; (SCATCHARD), A., 1107.
 inversion of, by hydrochloric acid (v. EULER and ÖLANDER), A., 1108.
 inhibition of enzymic hydrolysis of (v. EULER and JOSEPHSON), A., 542, 865.
 hydrolysis of, and its variation with concentration (COLIN and CHANDUN), A., 580.
 by invertase (INGERSOLL), A., 641; (ACHALME), A., 977.
 in presence of α -methylglucoside (NELSON and POST), A., 865.
 acid character of (DEDEK and TERECHOV), B., 927.
 acetylmethylcarbinol in fermentation of, by yeast (ELION), A., 543.
 determination of hydrogen-ion concentration in (BAISSAC), B., 717.
 raw, determination of the ash content of, by conductivity (KAYSER), B., 685; (ZERBAN and MULL), B., 717.
 determination of (CAMPBELL and HANNA), A., 1284.
 determination of, with the interferometer (HORACEK), B., 961.
 determination of, and its mixtures with sugars, polarimetrically (FINCKE), B., 252.
 determination of mixtures of invert-sugar or lactose and (JESSEN-HANSEN), B., 294.
 determination of, in condensed milk (SCHERINGA), B., 26.
 determination of, polarimetrically, in sweetened condensed milk (HÖNEGGER), B., 992.
 determination of, in condensed milk and chocolate (JÖRGENSEN), B., 212.
 determination of, in molasses (SAILLARD), B., 103.
 determination of, in strop (KRUISHEER), B., 963.
 See also Sugar.
 Sucrosephosphoric acid, degradation of, and its strychnine salt (NEUBERG, BEHRENS, DALMER, HATANO, ROSENFELD, and SABETAY), A., 941.
 enzymic hydrolysis of (NEUBERG and SABETAY), A., 93.
 partial hydrolysis of (HATANO), A., 51.
 Sugar, manufacture of (LEONARD), (P.), B., 294.
 prevention of inversion with sulphurous acid in (VAN DER HEIDE), B., 961.
 from cellulose (KRANTZ and DE MOLTKE-HUITFELDT), (P.), B., 337.
 Sugar, manufacture of, from beets, reaction between lime and sucrose in (SHAFFER, MORRISON, BROWN, STENGER, NEES, and GREAT WESTERN SUGAR Co.), (P.), B., 928.
 from wood (PINK), (P.), B., 459.
 determination of ash in, by conductivity (ARKHIPOVICH), B., 844.
 extraction of, from apples and pears (DISTILLERIES DES DEUX-SÈVRES), (P.), B., 294.
 from sugar cane (KESSLER), (P.), B., 928.
 apparatus for extraction of, from plant cuttings (RAABE), (P.), B., 459.
 refining of (KESSLER), (P.), B., 336.
 use of chlorine in (OCHI), B., 559.
 precipitation of lime in (SAILLARD), B., 103.
 chemistry of, by "norit" (HONIG), B., 641.
 influence of filter-cloth on scum press work in (HRUDA), B., 169.
 hydrogen-ion concentration as basis of control of alkalinity in (BLOWSKI and HOLVEN), B., 169.
 decolorising carbons for (BLOWSKI and BON), B., 294.
 crystallisation of (GRAHAM), (P.), B., 844.
 continuous (KESSLER), (P.), B., 602.
 behaviour of raffinose in (MEHRLE), B., 294.
 apparatus for evaporation and crystallisation of (LAFEUILLE), (P.), B., 928.
 recovery of, from molasses (LEONIS), (P.), B., 72; (BLUM), (P.), B., 294.
 from molasses and sugar juices (DEGUIDE), (P.), B., 561, 764*.
 vacuum-pan for graining (WHITE), (P.), B., 72.
 reviving of spent filtering materials for (HILLER and HILLER, INC.), (P.), B., 1026.
 compound of lime and (STEFFEN), (P.), B., 928.
 beet, manufacture of (NICHOLSON and BEAL; SCHREIBER; McGuire and DORR Co.), (P.), B., 561.
 extraction of (DE VECCHIS and HOME & COLONIAL INVESTMENTS), (P.), B., 25*.
 treatment of diffusion juice from (THATCHER, JOSI, and CELITE Co.), (P.), B., 686.
 white granulated, impurities in (PAINE and BALCH), B., 961.
 invert-, formation of, in cane-sugar factories in N. India (HUTCHINSON and RAMAYAR), B., 209.
 determination of, with Fehling's solution (OFNER), B., 928.
 determination of mixtures of sucrose and (JESSEN-HANSEN), B., 294.
 determination of, in strop (KRUISHEER), B., 963.
 raw, prevention of deterioration of, by inoculation with *Torula* (OWEN), B., 559.
 white, preservation of (OWEN), (P.), B., 561.
 Sugars (KILLIAN), A., 51, 940.
 formation of, as intermediate phase in production of coal (SCHWALBE and SCHEFF), B., 145.
 classification of (MALBY; LEVENE and SOBOTKA), A., 822.
 and their derivatives, rotation and structure of (HUDSON, PRINGSHEIM, and LEIBOWITZ), A., 276; (PHELPS and HUDSON), A., 500; (HUDSON), A., 714, 941; (KUNZ and HUDSON), A., 941, 1127.
 relation between configuration and direction of rotation of (DE WOLFF), A., 940.
 ring structure in (DREW and HAWORTH), A., 1125.
 optical properties of (KEENAN), A., 1194.
 effect of amphoteric substances on mutarotation of (LOWRY and FAULKNER), A., 148.
 cataphoresis of (KELLER and GICKLHORN), A., 353.
 fermentation of, and its mixtures with hexosediphosphoric acid (NEUBERG and KOBEL), A., 322.
 function of phosphates in (KLUYVER and STRUYK), A., 978.
 by yeast (NEUBERG and KOBEL), A., 1061.
 enzymic cleavage of (JOSEPHSON), A., 1174.
 utilisation of, by protozoa (COLAS-BELCOUR and LVOV), A., 1178.
 preparation of aldehydes from (KLEIN), A., 600.
 reactions of amines with (v. EULER and JOSEPHSON), A., 714; (v. EULER, BRUNIUS, and JOSEPHSON), A., 822.
 reactions of amino-acids with (MAUREN), A., 602; (NEUBERG and KOBEL), A., 1061.
 carbonates of (HAWORTH and MAW), A., 940.
 nitrates of, and their transformations (OLDHAM), A., 151.
 isopropylidene derivatives of (OHLE, KOLLER, and BEREND; OHLE and BEREND), A., 150; (OHLE and DICKHÄUSER), A., 151; (FREUDENBERG, BURKHART, and BRAUN; FREUDENBERG and WOLF), A., 601; (OHLE and SPENCKER), A., 1126.

- Sugars, diisopropylidene derivatives of (FREUDENBERG and SNEYRAL), A., 274.
n-butyl and *n*-propyl mercaptals of (UYEDA), A., 1125.
 in the organism (FISCHLER), A., 1170.
 fate of, in the body (CORI), A., 429; (C. F. and G. T. CORI), A., 1271.
 in blood and urine, influence of phosphates on (FRIEDLÄNDER and ROSENTHAL), A., 752.
 influence of saponin on intestinal absorption of (LASCH and BRÜEL), A., 972.
 production of, in the liver (BURN and MARKS), A., 1055.
 effect of alcohols on formation of, in frog's liver (LESSER), A., 756.
 decomposition of, in the skin (WOHLGEMUTH and NAKAMURA), A., 864.
 colloidal (v. WEIMARN), A., 121.
 methylated, identification of (ZEMPLÉN and BRAUN), A., 149.
 errors in analysis of (FILOSOFOV), B., 1025.
 analysis of confectionery products containing (KUHLMANN and GROSSFIELD), B., 252.
 analysis of mixtures of, from starch and cane-sugar products (NANJI and BEAZELEY), B., 685.
 modification of Schoorl's method for titration of (KOLTHOFF), B., 209.
 sintered glass crucibles for determination of (ELSDON), B., 169.
 determination of, in opium (RAKSHIT), B., 994.
 reducing, determination of, by the picric acid method (HERZFELD), B., 642.
 determination of, volumetrically in presence of sucrose (SCHOORL), B., 507, 508*.
 Sugar-agar, gas formation in the upper layers of (KLIENEBERGER), A., 759.
 Sugar-beet, pectins of (EHRlich and v. SOMMERFELD), A., 441.
 Sugar cane, influence of aluminium, manganese, and iron salts on growth of (McGEORGE), B., 169.
 Sugar factory control, electrical ash analysis in (LUNDÉN), B., 927.
 Sugar-house liquors, determination of colloids in (BADOLLET and PAINE), B., 507.
 Sugar industry, measurement of hydrogen-ion concentration in (BALOH and PAINE; TÖDT), B., 927.
 precipitation of calcium phosphate in (FARNELL), B., 927.
 Sugar juice, extraction of, by diffusion (SOKOLOV), (P.), B., 642.
 decolorisation and purification of (SCHONEBAUM), (P.), B., 337.
 effect of decolorising carbons on (TÖDT), B., 641.
 purification of, by chlorination (TOKYO IMPERIAL INDUSTRIAL LABORATORY), (P.), B., 170; (OGHI and KOTERA), (P.), B., 560, 718.
 with hyposulphite (DUTILLOY), (P.), B., 337.
 electro-osmotic purification of (WOLF, LANGSTEIN, and AMER. ELECTRO-OSMOSIS CORP.), (P.), B., 380*.
 clarification of (MORSE), (P.), B., 459.
 evaporation of (VILA), (P.), B., 764.
 surface tension of (SÁZAVSKÝ), B., 927.
 increase in alkalinity of, on evaporation (MINAEV; SHAPIRO), B., 844.
 physical testing of (LINDFORS), B., 72.
 from dried beets (KARAVAEV and PALKINE), B., 602.
 beet, precipitation of acids during defecation and carbonation of (PACHLOPNIK), B., 559.
 defecation of, with dolomitic lime and with saturation scum (KOHN), B., 507.
 hydroxyl-ion concentration and alkalinity in clarification of (ATEN and VAN GINNEKEN), B., 293.
 intermediate and thick, decolorisation of, by "carboraffin" and "norit" (LINSBAUER and FISER), B., 559.
 cane, increase of sugar recovery in clarification of (VACHIER), (P.), B., 561.
 clarifier for defecation of (VACHIER), (P.), B., 561.
 electrometric control of defecation of (BALCH and PAINE), B., 844.
 Sugar liquors, filtration or decolorisation of (RUSSELL), (P.), B., 642.
 fermented, recovery of alcohol, organic acids, and fertilisers from (REICH), (P.), B., 992.
 centrifugal machine for treatment of (RAGO), (P.), B., 72.
 Sugar massecuites, first-product, increase of colour of, during boiling (HOFFMANN), B., 507.
 Sugar mills, calandria for evaporators of (LEONARD), (P.), B., 686.
 Sugar products, determination of sucrose and its mixtures with sugars in (FINCKE), B., 252.
 determination of water in (VYSKOCIL), B., 560.
 Sugar solutions, purification of (SINGH and MAJITHIA), (P.), B., 294; (URBAN and ELBOGEN), (P.), B., 380*; (DAVIS), (P.), B., 844.
 entrainment phenomena in concentration of (BARDORF), B., 894.
 Baumé scale for, standard at 20° (U.S. BUREAU OF STANDARDS), B., 560.
 crystallisation of (LAFEUILLE), B., 992.
 automatic regulation of liquid level in evaporators, etc., for (N.V. NEDERLANDSCH-INDISCHE IND.), (P.), B., 560.
 changes in, during bonoblack filtration (KNOWLES), B., 72.
 precipitation of calcium sulphite in (FARNELL), B., 72.
 Sulphæmoglobin (HAUROWITZ), A., 314.
 Sulpharsphenamine, examination of (ELVOVE), B., 27.
 Sulphatase, distinction between myrosinase and (NEUBERG and WAGNER), A., 1060.
 Sulphates. See under Sulphur.
 Sulphides. See under Sulphur.
 Sulphide dyes, vat (MUTH, SCHMELZER, and GRASELLI DYESTUFF CORP.), (P.), B., 659*.
 Sulphide ores. See under Ores.
 Sulphinic acids from aromatic *o*-hydroxycarboxysulphochlorides (BRITISH DYESTUFFS CORP. and SAUNDERS), (P.), B., 233.
 Sulphites. See under Sulphur.
 Sulphito-cellulose liquors, reducing power of, and use in dyeing and bleaching (KOTIBASKER), B., 11.
 Sulphite liquors, manufacture of (RICHTER and BROWN Co.), (P.), B., 1014.
 purification of gases for preparation of (LURGI APPARATEBAU-Ges.), (P.), B., 580.
 acid, apparatus for manufacture of (BARCOCK and STEBBINS ENGINEERING & MANUF. Co.), (P.), B., 401.
 Sulphito-amminocobaltates. See under Cobalt bases.
 Sulphitocobaltates, constitution of (KLEMENT), A., 372.
 Sulphoacetic acid, ethyl ester, potassium salt (ANDREASCH), A., 819.
 Sulphoacetic acid, bromo-, and its salts (BACKER), A., 49.
 chloro-, resolution of, its salts (READ and MCMATH), A., 1025.
 5'-Sulpho-3'-amino-2'-methyl-1-phenyl-3-methyl-5-pyrazolone (CHEM. WORKS, formerly SANDOZ, and BÖNIGER), (P.), B., 657.
 5'-Sulpho-3'-amino-2'-methyl-1-phenyl-5-pyrazolone-3-carboxylic acid (CHEM. WORKS, formerly SANDOZ, and BÖNIGER), (P.), B., 657.
o-Sulphobenzoic acid, dipyrrogallyl ester (ORNDOFF and FUCHS), A., 950.
 3-Sulphobenzoic acid, 2,4-dinitro-, sodium salt (GORNALL and ROBINSON), A., 1028.
o-Sulphobenzoylacetic acid, methyl ethyl ester (FEIST, PAUSCHARDT, and DIBERN), A., 74.
 α -Sulphobutyramides, salts of (ANDREASON), A., 277.
 β -Sulphobutyric acid, and its active forms, and their salts (BACKER and BLOEMAN), A., 271.
d- and *l*- β -Sulphobutyric acids, and the *d*-barium salt (LEVENE and MIKESKA), A., 1225.
 α -Sulphobutyrylguanidines (ANDREASCH), A., 277.
 Sulphochlorides, aromatic, preparation of (LUSTIG and KATSCHER), (P.), B., 964.
 Sulphochloroamides, salts of, manufacture of (FARBENFABR. VORM. BAYER & Co.), (P.), B., 774.
 aromatic, alkali salts of (FARB. v. BAYER & Co.), (P.), B., 565.
 Sulphocyno-derivatives, manufacture of (A.-G. FÜR ANILIN-FABR.), (P.), B., 805*.
 4-Sulpho-2-methylphenyldi-*o*-tolylbismuthine sulphate (SUPNIEWSKI), A., 966.
 Sulphonal, toxicity of, and its recovery (FABRE and SIMONNET), A., 201.
 Sulphonaminomethanesulphonic acid, potassium salt (RASCHIG and PRAHL), A., 940.
 Sulphonation, concentration of acid for (COURTOT and BONNET), A., 605.
 by action of 1-pyridiniumsulphonic acid (BAUMGARTEN), A., 1130.
p-Sulphonazidobenzeneazo- β -naphthol (CURTIUS and STOLL), A., 393.
 Sulphonogallin, and dibromo-, and their salts and ethers (ORNDOFF and FUCHS), A., 950.
 Sulphonogallin, zinc salt (ORNDOFF and FUCHS), A., 950.
 Sulphonic acid, chloro-. See Chlorosulphonic acid.

- Sulphonic acids, manufacture of, and their salts, from mineral oils (SOHESTAKOV), (P.), B., 864.
 aliphatic, carbamide and guanidine derivatives of (ANDREASCH), A., 277, 819.
 aromatic, mercurisation of (WHITMORE and EHRENFELD), A., 534.
 salts, hydrolysis of (IPATIEV and PETROV), A., 1131.
 alkali salts of (HILLYER and NAT. ANILINE & CHEMICAL Co.), (P.), B., 122.
 alkyl esters, use of, in alkylation (RODIONOV), A., 532.
 alkylated, manufacture of (I. G. FARBENIND.), (P.), B., 850.
p-Sulphophenylarsinic acid (HEWITT, KING, and MURCH), A., 851.
α-Sulphopropionamide, ammonium salt (ANDREASCH), A., 277.
α-Sulphopropionic acid, ethyl ester, potassium salt (ANDREASCH), A., 819.
α-Sulphopropionylguanidine (ANDREASCH), A., 277.
 Sulphosalicylic acid, mercury derivatives, colloidal properties of (OSTWALD and MERTENS), A., 1097.
 Sulphoselenium from Vulcano (QUERCIGH), A., 42.
 Sulphosuccinamide (LEVENE and MIKESKA), A., 1226.
 Sulphoxides, resolution of (HARRISON, KENYON, and PHILLIPS), A., 1031.
 Sulphoxyl compounds (BINZ), A., 1123.
 Sulphur, pure, production of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 238; (MARX and UNION SULPHUR Co.), (P.), B., 406, 407; (RILEY & SONS, LTD. and BENTLEY), (P.), B., 666.
 from sulphurous gas from refining metals (YUSHKEVICH and KARZHAVIN), B., 1012.
 continuous production of, from ammonium polysulphide solutions (I. G. FARBENIND., KOPPE, and OEHLER), (P.), B., 744.
 production of ammonia, thiosulphates, and (FABR. CHEM. PROD. HEFTI and SCHILL), (P.), B., 322.
 and its compounds, production of, from sulphite-cellulose waste lyo (A.-G. F. ZELLSTOFF- & PAPIER-FABR. and STEIN-SOENEIDER), (P.), B., 580.
 preparation of an allotropic form of (WILKINSON and UNION SULPHUR Co.), (P.), B., 53.
 recovery of, from coal gas (HARNIST), B., 522.
 from gases (RIEDEL), (P.), B., 488.
 from gases containing hydrogen sulphide (MUEHLERT), (P.), B., 407; (FISCHER and DILTHEY), B., 938.
 from waste gases from metallurgical furnaces (WILL), B., 672.
 from spent gas-purifying material (PFISTERER), (P.), B., 650.
 recovery of copper, iron, and, from sulphide ores (PIKE), (P.), B., 245.
 recovery of iron and, from sulphide ores (CONDER), (P.), B., 196.
 continuous separation of, from solutions (LEGELER), (P.), B., 406, 789*.
 purification of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 238; (THORNTON), (P.), B., 666.
 molecular weight of, in pyrosulphuric acid (AUERBACH), A., 791.
 atoms, energy levels of (ALLISON), A., 214.
 series spectrum of (HOPFIELD), A., 1186.
 isotopes of (ASTON), A., 771.
 calorimetric researches on (MONDAIN-MONVAL), A., 1197.
 apparatus for continuous distillation of (RAFFINERIES INTERNAT. DE SOUFRE), (P.), B., 360.
 suspensions, polarisation of light in (POKROWSKI), A., 779.
 equilibria of, with pyridine, quinoline, and *p*-xylene (HAMMICK and HOLT), A., 1102.
 polychromism of (OSTWALD and AUERBACH), A., 575.
 viscous, thermal properties of (MONDAIN-MONVAL), A., 127.
 velocity of reaction between sodium sulphite and (WATSON and RAJAGOPALAN), A., 363.
 colloidal, production of (I. G. FARBENIND.), (P.), B., 916.
 thermal synthesis of (GUTHRIE), A., 574.
 action of electrolytes on stability of solutions of (v. WEIMARN and UTZINO), A., 23.
 fungicides containing (PIVER), (P.), B., 71.
 vapour, tarnishing of copper by (FISCHEBOK), A., 692.
 behaviour of metals and alloys with (BAUER and ARNDT), B., 327.
 reaction regions for mixtures of, with iron and aluminium, magnesium or silica (JORISSEN and ONGKIEHONG), A., 909.
 action of, on organic compounds (SZPERL and WYDRZYCKI), A., 952.
 lengthened chain compounds of (BENNETT), A., 1123.
 fumigation from combustion of (POLLAIN), (P.), B., 742.
- Sulphur, apparatus for burning (ALLIENNE), (P.), B., 742.
 blue solutions of (v. WEIMARN), A., 469.
 action of liquid ammonia solutions of, on cyanides (BERGSTROM), A., 1113.
 effect of, in briquetting of sub-bituminous coal (BENSON, BORGLIN, and ROURKE), B., 256.
 behaviour of, contained in producer-gas in the Siemens-Martin furnace (BROWN), B., 410.
 resinous condensation products from phenols and (Soc. CHEM. IND. IN BASLE), (P.), B., 203.
 tanning with (THOMAS), B., 376.
 oxidation of, by bacteria (GUITTONNEAU), A., 545.
 bacterial oxidation of, in pond deposits (FISCHER), B., 71.
 as plant nutrient (NELLER), B., 842.
 effect of, on nitrogen content of legumes (NELLER), B., 208.
 elementary, rate of oxidation of different forms of, in soil (SIMON and SCHOLLENBERGER), B., 208.
 effect of, on microflora of the soil (FIFE), B., 600.
 from fungicidal dusts and sprays, adherence of, to foliage (THATCHER and STREETER), B., 416.
 Sulphur compounds, purification of gases from (REESON and MOSS), (P.), B., 430.
 incompletely oxidised, treatment of air containing (CHIMURA), (P.), B., 742.
 Sulphur monochloride, preparation of, from methyl sulphide (CHEM. FABR. SOERING), (P.), B., 173.
 simultaneous preparation of barium chloride and (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 53.
 vapour pressure of (HARVEY and SCHUETTE), A., 1088.
 hydrolysis of (OLIN), A., 256.
 action of, on silica (BUDNIKOV and SCHILOV), A., 256.
 analysis of (BENESCH), B., 787.
 chlorides (BRUNI), A., 256.
 Thionyl bromide (MAYES and PARTINGTON), A., 1219.
 chloride, action of, on hydroxyanthraquinones (GREEN), A., 1041.
 Sulphuryl chloride, preparation of (DURRANS), B., 914.
 manufacture of (MCKEE and SALLS), (P.), B., 406.
 researches on (SILBERRAD), A., 158.
 catalytic chlorination of organic compounds by (SILBERRAD and BOAKE, ROBERTS & Co.), (P.), B., 1029.
 Pyrosulphuryl chloride (GRIGNARD and MURER), A., 1113, 1218.
 Sulphides, pyrogenic preparation of (TIEDE and THIMANN), A., 1112.
 pure, production of (GES. F. CHEM. & HÜTTENWESSEN), (P.), B., 915.
 adsorption of, by colloidal chromium hydroxide (HOLMES and DIETRICH), A., 468.
 reactions of, with alkaline-earth oxides (HEDVALL), A., 368; (HEDVALL and NORSTRÖM), A., 695.
 soluble, conversion of, into chlorides and sulphur (JAILL), (P.), B., 666.
 oxidation of, to sulphoxides (KNOLL), A., 720.
 mixed, formation of (RUFF and HIRSCH), A., 345.
 Sulphur dioxide, manufacture of (POLYSIUS), (P.), B., 15; (FENBERG and GEN. CHEMICAL Co.), (P.), B., 875.
 from sulphur-bearing slag (GEWERKSCHAFT LUTZ III), (P.), B., 320.
 gaseous, apparatus for (HECHENBLEIKNER and CHEM. CONSTRUCTION Co.), (P.), B., 707.
 concentrated, preparation of (DICKER and KUDON), (P.), B., 666.
 recovery of, from gases (SCHROEDER), (P.), B., 584*; (EUSTIS), (P.), B., 666*.
 from blow-pit gases (RICHTER, VAN ARSDEL, and BROWN Co.), (P.), B., 1014.
 from smelting furnace gases (EUSTIS), (P.), B., 359.
 and its derivatives, ultra-violet absorption spectra of aqueous solutions of (GETMAN), A., 452.
 electric moment of (ZAHN), A., 565.
 heat of solution of (STILES and FELSING), A., 800.
 liquid, miscibility of, with liquid tetrahalides (BOND and BEACH), A., 344.
 viscosity of, and of its mixtures with hydrogen (TRAUTZ and WEIZEL), A., 118.
 adsorption of, in acetic and sulphuric acids (ČUPR), A., 571.
 from gas mixtures (SCHROEDER), (P.), (B.), 321.
 from kiln gases by ceramic ware (JACKSON), B., 540.
 by glass (ČRESPI and MOLES), A., 1200.
 by wood charcoal (HENGLEIN and GRZENKOVSKI), B., 143.

- Sulphur dioxide**, adsorption of, equilibrium of benzene with (MAZZETTI and DE CARLI), A., 944.
 oxidising properties of (WARDLAW; CARTER), B., 664.
 reaction between sulphides and (MILBAUER and TUCEK), B., 495.
 interaction of hydrogen sulphide and (MATTHEWS), A., 1108.
 determination of, in air (RIES and CLARK), B., 706.
 liquid, determination of moisture content in (DEVER and KELVINATOR CORP.), (P.), B., 875.
trioxide, pure (SMITS and SCHOENMAKER), A., 785.
 melting point and vapour pressure of (SMITS and SCHOENMAKER), A., 669.
 determination of, in burner gases (GILLE), B., 437; (SCHMIDT), B., 581.
- Sulphurous acid**, and its salts (FOERSTER and VOGEL), A., 1016.
 action of nitrogen oxides with, in presence of sulphuric acid (BAILEY), B., 628.
 and its salts, determination of (ALSTERBERG), A., 928.
- Sulphites**, addition of, to unsaturated compounds (HÄGGLUND and RINGBOM), A., 368.
 action of, on aromatic amino- and hydroxy-compounds (BUCHERER and BASCH), A., 162.
 complex double (HAHN, MEIER, and SIEGERT), A., 372.
 and acid sulphites, detection of (GASPAR Y ARNAL), A., 928.
 determination of (BONNER and YOST), A., 261.
- Sulphuric acid**, catalytic preparation of (POLIAKOV), A., 918.
 electrolytic preparation of (SAXON), A., 134.
 preparation of, by electrolysis of sulphates (SAXON), A., 34.
 manufacture of (SKOGLUND), (P.), B., 12; (KLENCKE and AMER. LURGI CORP.), (P.), B., 13*; (MORITZ; VEROLA), (P.), B., 191; (FARR. v. BAYER & Co.), (P.), B., 273; (METALLBANK U. METALLURGISCHE GES. and KLENCKE), (P.), B., 319; (RHEINANIA VER. CHEM. FABR. and FRANK), (P.), B., 320; (PETERSEN), (P.), B., 486; (METAL TRADERS TECHNICAL, LTD. and METALLBANK & METALLURGISCHE GES.), (P.), B., 631*; (METALLBANK & METALLURGISCHE GES.), (P.), B., 821, 1012.
 from calcium sulphate (MÜLLER), B., 271.
 from gases from roasting of lead ores (HEYER), B., 190.
 from sulphur-bearing slag (GEWERKSCHAFT LUTZ III), (P.), B., 320.
 by the lead chamber process (RASCHIG), B., 11; (FISCHLER), B., 189.
 lead chambers for (MILLS and PACKARDS & FISON), (P.), B., 359.
 in towers (VETTERLEIN and CHEM. FABR. ZU SCHÖNINGEN), (P.), B., 12.
 electrodes for precipitators in, by contact process (A.-G. F. ANILIN-FABR.), (P.), B., 125.
 safety in (KERSHAW), B., 220.
 generation of sulphur dioxide for (GRASSELLI CHEMICAL Co. and BOERTLEIN), (P.), B., 12.
 concentrated (METALLBANK & METALLURGISCHE GES.), (P.), B., 236.
 * concentrated and fuming (KUDOH), (P.), B., 787, 1012.
 concentrated commercial (METALLBANK & METALLURGISCHE GES.), (P.), B., 787.
 manufacture of Portland cement and (GOETZMANN), (P.), B., 276.
 waste, recovery of, in manufacture of parchment paper (BECHHOLD and KARPLUS), (P.), B., 316.
 chamber slimes, recovery of selenium from (STAHL), B., 537.
 dilute, concentration of (GROSCHKE), (P.), B., 742; (VINEYARD), (P.), B., 914.
 utilisation of gases evolved in (RHEINANIA VER. CHEM. FABR.), (P.), B., 125.
 adsorption of gaseous hydrogen chloride by (CUPR), A., 17.
 partial pressures of water vapour and sulphuric acid vapour over concentrated solutions of (THOMAS and BARKER), A., 235.
 equilibrium of sodium sulphate, ethyl alcohol, and (DUNNICLIFF, SIKKA, and HOON), A., 1102.
 action of, on copper (ROGERS), A., 587.
 compound of barium sulphate and (KRAUSS), A., 368.
 fuming, analysis of (HOWARD and GRASSELLI CHEMICAL Co.), (P.), B., 914.
 apparatus for analysis of (BOERTLEIN and GRASSELLI CHEMICAL Co.), (P.), B., 875.
 determination of, in wool (HIRST and KING), B., 266.
- Sulphur** :—
Sulphates, equilibrium of the formation of (JÄNECKE), A., 358.
 infra-red absorption spectra of (PLYLER), A., 990.
 cells containing solutions of (ÅKERLÖF), A., 688.
 crystalline, birefringence of (RAMAN), A., 994.
 phase equilibria of (JÄNECKE), B., 883.
 reduction of (WHITE, ALEXANDER, and GOODELL), (P.), B., 126.
 and acid sulphates, dry, action of fluorine on (FICHTER and HUMPERT), A., 699.
 production and use of, in soils as affected by cropping and sulphur treatments (JOHNSTON), B., 457.
 distribution of, in tissues (DENIS and LECHE), A., 87.
 determination of (BRIWUL), A., 1221.
 determination of, in presence of lead (VLASTIMIL and MATULA), A., 928.
 determination of, electrovolumetrically (ZANKO), A., 910.
 determination of, volumetrically (ATKINSON), A., 38, 261.
 determination of, in urine and tissues (LORBER; DENIS and LECHE), A., 212.
- Sulphuric-uronic acids**, and their acid salts (MEYER and KASPER), A., 925.
- Hyposulphites** (*hydrosulphites*), reduction of organic compounds with (BUCHERER), (P.), B., 528.
 discharge pastes containing (KUNZE), (P.), B., 786.
 determination of, volumetrically (KOTN), B., 582.
- Persulphuric acid**, and its salts, distillation of (BAUM), (P.), B., 439.
 catalysis by silver ions of the oxidation of chromic salts by (YOST), A., 251.
- Pyrosulphuric acid**, specific heat and heat of fusion of, and its use in cryoscopy (AUERBACH), A., 791.
- Thiosulphuric acid**, stability and decomposition of (RIESENFELD and GRÜNTAL), A., 267.
 autocatalytic decomposition of (JABŁCZYŃSKI and WARSZAWSKA-RYTEL), A., 482; (JABŁCZYŃSKI and RYTEL), A., 913.
 action of sulphurous acid with (FOERSTER and VOGEL), A., 1016.
- Thiosulphates**, production of ammonia, sulphur, and (FABR. CHEM. PROD. HEFTY and SCHILT), (P.), B., 322.
 recovery of thiocyanates and (DARRIN and KOPPERS Co.), (P.), B., 236.
 standardisation of solutions of (ALSTERBERG), A., 374.
 standardisation of, with permanganates (SCHRÖDER), A., 705.
 decomposition of standard solutions of (SCHULEK), A., 1017.
 variability of solutions of, in titration (MAYR), A., 814.
 high values of dichromate in determinations with (K. and W. BÖTTGER), A., 1221.
 determination of, in urine (HOLBOLL), A., 753.
- Dithionic acid**, and its salts (DE BAAT), A., 466.
- Sulphur organic compounds** (SCHÖNBERG and KRÜLL), A., 953.
 for fixing and making lakes from basic dyes (A.-G. F. ANILIN-FABR.), (P.), B., 596.
 removal of, from naphtha with sodium hypochlorite (WOOD, GREENE, and PROVINE), B., 811.
 action of petroleum-refining agents on naphtha solutions of (WOOD, SHEELY, and TRUSTY), B., 259.
 in Kimmeridge shale oil (CHALLENGER, HASLAM, BRANHALL, and WALKDEN), B., 617.
 asymmetric, isomerism in (WEDEKIND), A., 146.
 nitrosyl derivatives of (LECHER and SEIFEN), A., 819.
- Sulphur acids**, reaction of magnesium organic halides with esters of (GILMAN, ROBINSON, and BEABER), A., 1239.
- Sulphides**, aromatic, mercuration of (SACHS and ORT), A., 396.
- Thiosulphates**, organic, reactions of (FOOTNER and SMILES), A., 159.
- Sulphur determination** :—
 free, determination of, in benzol (ORMANDY and CRAVEN), B., 232.
 determination of, in coal (MELZER), B., 969.
 determination of, in fuels by oxygen bomb method (BRADLEY, CORBIN, and FLOYD), B., 616.
 determination of, in liquid fuel (DE FAZI), B., 971.
 free, determination of, in spent gas-purifying materials (STAVO-RINUS), B., 906.
 determination of, in iron (JÄRVINEN), B., 983.
 determination of, in iron and steel (KLING and LASSIEUR), B., 588.
 determination of, in mineral oils (WAGNER), B., 75.

- Sulphur determination:**—
determination of, in organic compounds (FUNK and KON), A., 853.
micro-determination of, in organic compounds (EIGENBERGER), A., 701.
determination of, in vulcanised rubber (KAHANE), B., 639.
elementary, determination of, in soils (SIMON and SCHOLLENBERGER), B., 70.
- Sulphur Black**, oxidation and constitution of (PERRET), B., 527.
from benzenediazonitrodiphenylamino (BERETTA), B., 865.
- Sulphur burners** (HOWARD and GRASSELLI CHEMICAL CO.), (P.), B., 155; (GRASSELLI CHEMICAL CO.), (P.), B., 789*.
- utilisation of heat of gases from (CLEMM, SCHNEIDER, and ZELLSTOFF-FABR. WALDHOF), (P.), B., 538.
- Sulphur dyes**, prevention of bronzy shades in dyeing with (KORSCHKE), B., 783; (KOOX), B., 784.
white and multicolour effects on fabrics dyed with (SCHEUNERT and FROSSARD; ZUNDEL and VOGT), B., 49.
- Sulphuric and Sulphurous acids.** See under Sulphur.
- Sulphuryl chloride.** See under Sulphur.
- Sulphuryl azide**, action of, on benzene (SCHMIDT), A., 56.
- Sumac**, extraction of, for analysis (PARKER and WINCH), B., 989.
- Sun**, nitrogen in (SAHA), A., 221; (BAXANDALL), A., 445.
- Sunflowers** as a silage crop (GAINES and NEVENS), B., 296.
mineral composition of, for silage (NEIDIG), A., 761.
- Sunflower oil**, polymerisation of, in the form of its soap (PETROV and DIMAKOV), B., 712.
oxidation and polymerisation of (PETROV and DANILOVITSCH), B., 372.
- Sunlight**, production of catalytic phenomena by means of (ROUSSEAU), (P.), B., 406.
- Superconductors** (ONNES), A., 891.
- Superheaters**, influence of segregation on corrosion of (WOODBINE and ROBERTS), B., 471, 855.
- Supersaturation**, formation of nuclei in (VOLMER and WEBER), A., 676.
- Suprarenal glands**, adrenaline content of (TAKAHASHI), A., 857.
proteins of (SABRY), A., 1167.
of birds, adrenaline in, during beri-beri (GÖ), A., 1270.
- Surfaces**, measurement of polarity of (ADAM, MORRELL, and NORRISH), A., 120.
thermodynamics of (GAY), A., 578.
composite, physical properties of (RAMSDEN), A., 1094.
- Surface layers**, structure of (FRUMKIN), A., 1093.
- Surface tension** (FAUST), A., 674.
measurement of (GOIFFON; IREDALE), A., 790.
by the drop-weight method (HARKINS), A., 568.
by the hyperbola method (FERGUSON and VOGEL), A., 573.
by the ripple method (GHOSH, BANERJI, and DATTA), A., 670.
influence of adsorbents on (JENDRASSIK), A., 573.
temperatures of equal (HERZ), A., 568.
and heat of adsorption (CASSEL), A., 127.
in relation to heat of vaporisation (HERZ), A., 1008.
variation of, with pressure (GAY), A., 578, 682.
and vapour pressure of binary mixed liquids (YAJNIK, SHARMA, and BHARADWAJ), A., 1000.
relation between constants in the equation of state and (SCHUSTER), A., 342.
and viscosity of liquids (SHARMA), A., 464.
and adsorptive forces in solutions (REHENDER), A., 674.
relation of, to spreading qualities of solutions (ROBINSON), B., 30.
and foaming power (BARTSCH), A., 348.
influence of narcotics on (CZANIK), A., 200.
of liquids, effect of gases on (TAMAMUSHI), A., 1093.
of dielectric liquids, influence of temperature on (JUNG), A., 1094.
of liquid metals (BIRCHMILLER), A., 895.
of aqueous salt solutions (GOARD), A., 20.
of colloidal solutions in relation to stability (BOUTARIC and SEMELET), A., 1202.
of solids (ANTONOV), A., 671.
in vacuo (ILJIN), A., 1104.
of charged surfaces (RICE), A., 1202.
- Surfacing material** for tennis courts, etc. (RAMSDEN), (P.), B., 192.
- Sweat**, excretion of choline in (KLAUS), A., 195.
human, uric acid in (VOIT), A., 1168.
analysis of, in skin diseases (BARNEY), A., 317.
- Swedes**, composition of (WHITEHEAD), B., 847.
dry matter of (SANSOME), B., 296.
- Swedenborgite** (AMINOFF), A., 266.
- Sweets**, analysis of, containing milk fat (FRICKE), B., 836.
- Sweetbreads**, nutritive value of proteins in (HOAGLAND and SNIDER), B., 846.
- Sweetening materials**, natural and artificial (TÄUFEL and KLEMM), B., 106.
- Sweetness**, relation between chemical constitution and (TÄUFEL), A., 430.
- Swelling**, measurement of (THIESSEN), A., 124.
and adsorption (KUBELKA and TAUSIG), A., 900.
of gels, kinetics of (LIEPATOV), A., 577.
- Switch oils**, testing of (BAUM), B., 475.
used, purification of, with fuller's earth (v. DER HEYDEN and TYPKE), B., 198.
- Sylvestrene**, occurrence of (RAO and SIMONSEN), A., 72, 521.
- Sylvine**, symmetry of (HERZFELD and HETTINGER), A., 889; (VALETON), A., 1085.
- Symbols**, chemical, augmentation of, by signs (SAXON), A., 493.
superscript exponents to (ADAMS), A., 493.
- "Synthol"**, production of (TROPSCH and PHILIPPOVICH), B., 897.
decomposition of, at atmospheric pressure (TROPSCH), B., 652.
higher-boiling constituents of (TROPSCH), B., 860.
- Syphilis**, action of bismuth salts in (LEVADITI, NICOLAU, SCHOEN, GIRARD, and MANIN), A., 975.
- Syringe**, micrometer (TREVAN), A., 211.
- Syringic acid**, 2-bromo- (LEVINE), A., 516.
- Syrups**, pharmaceutical, preservation of (SABALITSCHKA and BÖHM), B., 511.
- Systems**, associated alicyclic; formation and stability of (FARMER and ROSS), A., 66.
disperse, size of particles in (GYEMANT), A., 561.
heterogeneous, equilibrium of (BUTLER), A., 908.
of biological interest (HOLLÓ and DEUTSCH), A., 1001.
multicomponent, plane diagram of equilibrium in (LODOČNIKOV), A., 358.

T.

- Tagetes glandulifera*, terpene ketones from oil of (JONES and SMITH), A., 72.
- Tagetone**, and its derivatives (JONES and SMITH), A., 72.
- Taka-diastase** (NISHIMURA), B., 104.
enzymes of (SANO), A., 865.
hydrolysis of starch and dextrin by (MASLOW and DAVISON), A., 757.
- Taka-invertase** (LEIBOWITZ and MECHLINSKI), A., 865.
- Taka-maltase** (LEIBOWITZ and MECHLINSKI), A., 865.
- Tall oil** (DITTMER), B., 414.
- Tallow**, detection of, in lard (MUSCHTER and VISSER), B., 678.
determination of the titer of (DAVIDSOHN), B., 712.
- Tampon**, preparation of, for wounds (VOGEL), (P.), B., 805*.
- Tanks** for treatment of liquids or solids mixed with liquids (STOKES), (P.), B., 346*.
electrolytic (ARNALOT), (P.), B., 677.
- Tank blocks**, testing of (MCINTYRE), B., 745.
- Tannery limes**, sharpened, behaviour of, in unhairing (KAYE and MARRIOTT), B., 249.
- Tannery waste**, treatment of (MOHLMAN), B., 998.
- Tannic acid**, examination of (FORBES), B., 461.
ferric salt, structure of (ZETSCHE and LOOSLI), A., 67.
determination of, in vinegar (REIF), B., 25.
- Tannin**, acetylation of (O. and J. M. FERNÁNDEZ), B., 461.
analysis (HUGONIN), B., 454.
official method of (SOCIETY OF LEATHER TRADES CHEMISTS), B., 454.
determination of (MEUNIER and JANET), B., 556.
- Tannins** (FREUDENBERG, CARRARA, and COHN), A., 73.
effect of light on formation of (MICHEL-DURAND), A., 208.
solvents for (MICHEL-DURAND), B., 415.
coagulation of alkali-blue sols of (FREUNDLICH and MITSCHURIN), A., 794.
content of, in Western hemlock after immersion in sea water (TEMPLETON and SHERRARD), B., 205.
for use in wine making (LEVALLOIS), B., 360.
physiological function of (MICHEL-DURAND), A., 981.
- Japanese dyeing** (UEDA), B., 1021.
- synthetic**, use of by-products of saccharin manufacture in production of (HERZOG), B., 599.
determination of acidity in (BRAVO), B., 69.

Tanning extracts, conversion of sulphite waste liquors into (BAKER), (P.), B., 799.
 detection of adulteration in (MEUNIER and JAMET), B., 798.
 vegetable, detection of synthetic tannins in (GERNGROSS, BAU, and SANDOR), B., 23; (GERNGROSS and SANDOR), B., 334.
 Tanning (FRIEDENTHAL), (P.), B., 24; (JORDAN), (P.), B., 101; (HELL), (P.), B., 138*; (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 168; (MORRISON), (P.), B., 505*; (GEIGY and CHEM. FABR. HULTINGEN, JUCKER & Co.), (P.), B., 958.
 fifty years of (WILSON), B., 839.
 preparations from sulphite-cellulose waste lye (BLACKADDER and ROBESON PROCESS Co.), (P.), B., 291.
 products for use in (KAHN, LE BRETON, and SCHAEFFER), (P.), B., 557.
 use of by-products of saccharin manufacture in (HERZOG), B., 599.
 measurement of hydrogen-ion concentration in (BALDRACCO), B., 957.
 chemical nature of (THOMAS and FOSTER), B., 291.
 colloid chemistry in (GUSTAVSON), B., 291.
 rôle of colloid mills in utilisation of materials for (THUAN), B., 957.
 changes in "true tanning figure" during (POVARNIN and ESROCHI), B., 556.
 of hides (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 455, 456.
 with formaldehyde (THOMAS, KELLY, and FOSTER), B., 290.
 effect of hydrogen-ion concentration and neutral salts on (GERNGROSS and GORGES), B., 957.
 with gallotannin and quinone (THOMAS and KELLY), B., 639.
 with quinones (THOMAS and KELLY), B., 504.
 with sulphur (THOMAS), B., 376.
 chrome (STIASNY and SZEGÖ), B., 376; (HILPERT and SCHLUMBERGER), B., 639, 891; (AGENO-VALLA and ASTENGO), B., 716.
 at the isoelectric point of collagen (COBB and HUNT), B., 925.
 internal complex salt formation in (GUSTAVSON), B., 290.
 one-bath (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 640*.
 chemical nature of (GUSTAVSON), B., 503.
 control of liquors in (WOODROFFE), B., 69.
 dark, brightening of (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 716.
 oil (ROGERS and MATHUR), (P.), B., 891.
 vegetable (THOMAS and KELLY), B., 639; (THOMAS), B., 989.
 effect of, on combination of collagen with acid (WILSON and BEAR), B., 205.
 Tanning agents (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 558.
 manufacture of (A.-G. F. ANILIN-FABR.), (P.), B., 24; (CHEM. FABR. WORMS), (P.), B., 168; (BADISCHE ANILIN- & SODA-FABR.); FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 600; (I. G. FARBENIND.), (P.), B., 891.
 action of salt-treated hide powder on (GUSTAVSON), B., 839.
 vegetable, combining power of, with hide proteins (SCHIAFFARELLI and AVENATI-BASSI), B., 716.
 Tanning liquors, measurement of plumping powers of (PORTER), B., 926.
 electrometric determination of hydrogen-ion concentration in (KUBELKA and WAGNER), B., 683.
 chrome, analysis of (INNES), B., 168.
 determination of chromium in (KUBELKA and WAGNER), B., 683.
 Tanning materials, manufacture of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 455, 456, 505*; (RÖHM), (P.), B., 799.
 from sulphite-cellulose waste lye (BREEDIS and ROHM & HAAS Co.), (P.), B., 249; (HÖNIG and FUCHS), (P.), B., 456.
 fluorescence of acetone extracts of (MEUNIER and JAMET), B., 798.
 sampling of (BENNETT), B., 454.
 action of sodium sulphate in (WOLESENSKY), B., 925.
 artificial and natural, distinction of, by means of ultra-violet light (GERNGROSS, BAN, and SANDOR), B., 839.
 South Indian (CHOUDARY and YOGANANDAM), B., 925.
 synthetic (WOLESENSKY), B., 375.
 behaviour of, towards hide substance (WOLESENSKY), B., 455.
 analysis of (WOLESENSKY), B., 1022.
 vegetable, astringency of (CREDE), B., 138.
 determination of moisture in (CLARKE), B., 839.
 Tanning solutions, vegetable, ultrafiltration of (THOMAS and KELLY), B., 290; (BROWNE), B., 925.

Tanning substances, manufacture of (RÖHM), (P.), B., 206.
 Tanning waters, waste, treatment of (NOYER), B., 958.
 Tantalum, manufacture of thin sheets of (GEN. ELECTRIC Co. and PATENT TREUHAND GES. F. ELEKTR. GLÜHLAMPEN), (P.), B., 370*.
 recovery of, from ores (GREGORY), (P.), B., 590.
 spectral emissivity and melting point of (WORTHING), A., 892.
 effect of temperature on physical properties of (WORTHING), A., 892.
 cementation of iron and copper alloys by (LAISSUS), B., 545.
 Tantalum alloys (BRACE and WESTINGHOUSE ELECTRIC & MANUF. Co.), (P.), B., 711.
 Tantalum determination and separation:—
 determination of (RUFF and THOMAS), A., 1222.
 separation of niobium and (SEARS), B., 282.
 Tar, manufacture of, for road-making (SENSICLE), (P.), B., 909.
 and oils therefrom, removal of cresote from, by means of solid calcium hydroxide (v. WALTHER and BIELENBERG), B., 310.
 recovery of, from emulsions (DIETZSCH), (P.), B., 702.
 cracking of (LONON), (P.), B., 525.
 at ordinary pressures (HERBST), B., 907.
 distillation of (YOUNG), (P.), B., 310; (DAVIDSON, MICHIE, and MUDDIMAN), (P.), B., 815; (DOWNS; AB-DER-HALDEN), (P.), B., 1006.
 apparatus for (KOPFERS and KOPFERS DEVELOPMENT CORP.), (P.), B., 909.
 continuous distillation of (BLÜMNER), (P.), B., 264*.
 destructive distillation of (BLÜMNER), (P.), B., 865.
 vacuum distillation of, with superheated steam (DUNKEL), B., 865.
 and tar oils, transport and distillation of (HEYL), (P.), B., 699.
 decresotisation of, and tar products (BUBE), (P.), B., 909.
 desulphurisation of (MASSENET), (P.), B., 231.
 emulsification of (BILLINGHAM), (P.), B., 655.
 working-up of (SUIDA), (P.), B., 310.
 separators for (MOSCOVITCH and "LIGNOJEN" MASCHINEN- & APPARATEBAU GES.), (P.), B., 6*.
 vapours, increasing the calorific value of combustible gases from decomposition of (STRACHE), B., 859.
 and its vapours, effect of, on soils (EWERT), B., 378.
 Tar, acid, from petroleum refining, recovery of acid and oil from (HALLORAN, DAVIS, DAVIDSON, and STANDARD OIL Co.), (P.), B., 526.
 coal, composition of (EDWARDS and WILLMORE), B., 353.
 from low-temperature carbonisation (PARRISH and ROWE), B., 655.
 application of the Bergius process to (RHEINFELDER), B., 780.
 desulphurisation of acid fractions from (STADNIKOV, GAVRILOV, and RAKOVSKI), B., 353.
 low-temperature, composition of light oil from (BROCHE), B., 232.
 separation of constituents of, without distillation (ZECHÉ STINNES and WEINDEL), (P.), B., 432.
 cuprene (SCHLÄFFER and STADLER), A., 389.
 heavy, heating of, for treatment of roads (RIDGWAY), (P.), B., 364*.
 lignite, thermal decomposition of (WALTHER and BENTHIN), B., 865.
 blue oil of (HERZENBERG and RUHEMANN), B., 42.
 acetyl values of unsaponifiable residue of (HOLDE), A., 1123.
 low-temperature, treatment of (SOC. ANON. HYDROCARBURES ET DÉRIVÉS), (P.), B., 264.
 working-up of, without distillation (v. WALTHER, STEINBRECHER, and BIELENBERG), B., 310.
 producer-gas, phenolic constituents of (STEINKOPF and HÖPNER), B., 624.
 low-boiling, from carbonisation of lignite (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 308.
 low-temperature, history and composition of (PARRISH), B., 1006.
 production of (WEISS), (P.), B., 39.
 yield of, with the aluminium retort (FLEISCHMANN), B., 651.
 separation of constituents of (ZECHÉ STINNES; IRINYI), (P.), B., 184.
 treatment and purification of phenols from (ZECHÉ STINNES and WEINDEL; ZECHÉ STINNES and CORRELL), (P.), B., 815.
 basic compounds in (OSHIMA and ISHIBASHI), B., 1006.
 production of hydrocarbons or lower phenols from phenols of (OBERSCHLESISCHE KOKSWERKE & CHEM. FABR. and SUPAN), (P.), B., 576.

- Tar, low-temperature, light oils from (KLEIN), B., 148; (ZECHE STINNES), (P.), B., 576.
 recovery of paraffin wax from (MAILHE), (P.), B., 479.
 stable, non-resinifying products from (ZECHE STINNES and WEINDEL), (P.), B., 865.
 road, manufacture of (AB-DER-HALDEN), B., 232; (SENSICLE), (P.), B., 842.
 production of, without distillation (SENSICLE), B., 310.
 sapropel-, insulating material from (ZELINSKI and MAXOROV), B., 121.
- Tar oils, refining of (HOFMANN and DUNKEL), (P.), B., 264.
 treatment of alkaline waste products from (SUDEFELT & Co. and GELBKE), (P.), B., 526.
 distillation of (KRIKHOVIN), (P.), B., 148.
 working up of fractions with a high creosote content (KÁRPÁTI), B., 42.
 recovery of phenols and pyridine bases from (PAPILLON), (P.), B., 232.
 hydrogenation of (DEMANN), (P.), B., 973.
 production of viscous liquids from (LILIENFELD), (P.), B., 479*.
 from Russian bituminous schists, occurrence of thiophen, benzene, and their homologues in (DODONOV and SOCHESTVENSKAJA), B., 1006.
 low-temperature (LEWIS), B., 624.
 for operation of Diesel engines (SPILKER), B., 570.
 wood, treatment of (ELLIS and ELLIS-FOSTER Co.), (P.), B., 815.
 refining of (MAZE and ELLIS-FOSTER Co.), (P.), B., 85.
 determination of olefinic, aromatic, and saturated hydrocarbons in (DANAILA and MELINESCU), B., 476*.
- Tar water, treatment of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 478, 624*.
- Taraktogenos Kurzii*, oil of (ANDRÉ), B., 98.
- Taramite (MOROZEWICZ), A., 266.
- Tanacetone. See Thujono.
- Tartaric acid, preparation of (DIAMALT-A.-G.), (P.), B., 853.
 from saccharic acid (DIAMALT-A.-G.), (P.), B., 28.
 manufacture of (CHEM. FABR. STOLTZENBERG), (P.), B., 995.
 rotatory power of (LUCAS), A., 886.
 in dilute solution with ultra-violet light (BRUHAT and PAUTHENIER), A., 661.
 influence of boric acid on (DARMOIS), A., 1201.
 rotatory dispersion of (VELLINGER), A., 1201.
 oxidation of, by silver nitrate (MAXTED), A., 1025.
 metallic salts, isomorphous double, anomalous optical properties of (BUCKLEY), A., 1085.
 benzylmorphino salt, solubility of (DOTT), B., 419.
 gadolinium salts (SÁRKAR), A., 1218.
 potassium bismuth salt, toxicity and excretion of (LEONARD and O'BRIEN), A., 975.
 pyridine and quinoline salts (PARSELLE), A., 957.
 sodium salt, reactions of, with salts of weak metallic bases (BRITTON), A., 586.
 sodium antimonyl salt, compounds of polyhydric phenols with (CHRISTIANSEN), A., 722.
 sodium bismuth salt (ПЕРНЕР and ЛИКИЕРНИК), A., 488.
 basic uranium salt (LOBANOV), A., 372.
 alkali ethyl esters, electrolysis of (VANZETTI and MANOA), A., 713.
 detection of (PETERSON), A., 84.
 detection of, micrographically, in solutions (FRANÇOIS and LORMAND), B., 802.
 detection of, in self-raising flour (LERRIGO), B., 460.
 determination of, oxidimetrically, in presence of nitrites (WIKUL), A., 535.
 determination of, in raw materials (GLASER), B., 210.
 determination of, in wines (DUBOUX), B., 966.
- d*-Tartaric acid, rotatory and refractive dispersions of (PAGLIARULO), A., 1201.
- Tartaric acids (LONGCHAMPON), A., 385.
- Tartarylhaemin (HAJDU), A., 191; (GOLDMAN), A., 423.
- Taurine, replacement of cystine by, in diet (G. T. and H. B. LEWIS; ROSE and HUDDLESTON), A., 1056.
- Tautomerism, mechanism of (INGOLD, SHORPEE, and THORPE), A., 939.
 and absorption spectra (MORTON and ROSNEY; MORTON and ROGERS), A., 454.
 and additive reactions (COOPER, and C. K. and E. H. INGOLD), A., 939.
 lactam-lactim, in relation to absorption spectra (MORTON and ROGERS), A., 9.
- Tautomerism, ring-chain (DUTT), A., 725.
 three-carbon (KON), A., 952; (FARROW and KON), A., 1040; (LINSTEAD and WILLIAMS; JOHNSON and KON), A., 1245; (KON and SPEIGHT), A., 1246.
 transannular (BARNETT and MATTHEWS), A., 1030.
- Tawing, products for use in (KAHN, LE BRETON, and SCHAEFFER), (P.), B., 557.
- Tea, determination of iron in, colorimetrically (MUMMERY), B., 993.
- Tea leaves, adenine nucleotide from (CALVERY), A., 982.
- Tears, chemical constituents of (WADA), A., 858.
- Telluric acid. See under Tellurium.
- cyclo*Telluripentanedione dichlorides (MORGAN), A., 188.
- Telluripropionic acid, tribromo- and trichloro- (MORGAN and KELLETT), A., 747.
- Tellurium, molecular weight of, in pyrosulphuric acid (AUERBAON), A., 791.
 absorption spectrum of (ZUMSTEIN), A., 650.
 arc spectrum of (MCLENNAN, SMITH, and PETERS), A., 107.
 films, sputtered, crystalline nature of (SIEG), A., 1085.
 colloidal (GUTHRIE and OTTENSTEIN), A., 121.
 dispersoid solutions of (AUERBACH), A., 574.
 action of, on cyanides in liquid ammonia (BERGSTROM), A., 1113.
 precipitation of, and its separation from heavy metals and from selenium (BRUKL and MAXYMOWICZ), A., 490.
- Tellurium tetrachloride, reactions of, with aryl alkyl ethers (MORGAN and DREW), A., 83; (MORGAN and KELLETT), A., 747.
 reactions of ketones with (MORGAN and ELVINS), A., 188.
 nitride (STRECKER and EBERT), A., 137.
 dioxide, action of hydrogen fluoride on (PRIDEAUX and MILLOTT), A., 489.
- Telluric acid, crystal structure of (KIRKPATRICK and PAULING), A., 996.
- Tellurium organic compounds, cyclic (DREW), A., 311.
- Tellurium alkyl and aryl ketones, and their halides (MORGAN and ELVINS), A., 188.
- Tellurium determination:—
 determination of, electrolytically (LUKAS and JÍLEK), A., 1018.
 determination of, electrometrically, in presence of ferric iron, selenium, and copper (SCHRENK and BROWNING), A., 261.
 determination of, with permanganate (SCHRENK and BROWNING), A., 1115.
- cyclo*Telluripentanediones, and their derivatives, bactericidal action of (MORGAN, COOPER, and RAWSON), B., 518.
- Temperature, measurement of, by thermo-couples in unequally heated enclosures (MANDELL), B., 79.
 from carbon dioxide content of combustion gases (POTTER and COMBUSTION CONTROL Co.), (P.), B., 429.
 charts for pressure and (CALINGAERT and DAVIS), A., 142.
 relation between pressure, density, and (PICKERING), A., 569.
 fusible elements for indicating changes of (FEDERATED ENGINEERS DEVELOPMENT CORP.), (P.), B., 33.
 critical. See Critical temperature.
 high, measurement of, by spectrophotography (GRIFFITH), B., 79.
 investigations at (RUFF and JOSEPHY), A., 685.
 methods of physico-chemical research at (JAEGER), A., 895.
 low, measurement of (VAN AGT and ONNES), A., 231, 264.
 international standards for (KEESOM and ONNES), A., 893.
 bath for observations at (PATTERSON), A., 932.
 surface, measurement of (BOYER and BUSS), B., 647; (ADAMS and KEAN), B., 807.
- Temperature scale, low, platinum thermometers for (LOOMIS and WALTERS), A., 141.
- Tendons, X-ray study of contraction of (GERNGROSS and KATZ), A., 1099.
- Tensile-strength curve, high-temperature (INGALL), B., 328*.
- Tensile tests at high temperatures, influence of time factor on (BROWN), B., 328*.
- Terap bark fibre (BISHOP), B., 266.
- Teresantic acid, constitution of (RUZICKA and LIEBE), A., 400.
- Ternary systems (HILL and MILLER), A., 26.
- Terpenes (HOUBEN and PFANKUCH), A., 731, 1251; (HIRAO), A., 1135.
 action of chromyl chloride on (SWORD), A., 841.
 and their derivatives, action of phosphoric acid on (CARTER, SMITH, and READ), B., 75.
 oxygen compounds of (RAMAGE and OZONID CORP.), (P.), B., 610.

- Terpenes, aliphatic, and their derivatives (ENKLAAR, A.), 619.
separation of mixtures of derivatives of (AUSTERWEIL and PEUFAILLIT, (P.), B., 900.
- Terpene alcohols, acid phthalates of (PAOLINI, A.), 175.
- Terpene compounds, higher (RUZICKA and RUDOLPH, A.), 209;
(RUZICKA and PFEIFFER, A.), 1148.
- Terpin hydrate, action of, with oxalic acid and with Japanese acid clay (ONO), A., 72.
- Terpineol, formation of, from mother liquor from terpin hydrate (SUSSKIND, B.), 963.
action of Japanese acid clay on (ONO), A., 72.
- α -Terpineols, isomeric, and their esters (PAOLINI, A.), 298.
- Terra-cotta, firing of, in open kilns (MATHIASSEN, B.), 824.
maturing of (ANDERSON, B.), 128.
summary and bibliography on (WILSON, B.), 361.
polychrome, overglazes for (BENNETT, B.), 489.
- Tetany (DRUCKER and FABER, A.), 753.
oral administration of strontium in (SWINGLE and WENNER, A.), 318.
lactic acid in muscle during (EMDEN, HIRSCH-KAUFFMANN, LEHNARTZ, and DEUTICKE, A.), 427.
destruction of toxin of (WESSEBERG, B.), 897.
effect of oxygen on toxin of (BERTHELOT, RAMON, and AMOURÉUX, A.), 1178.
pathogenesis of (DRAGSTEDT and SUDAN, A.), 971.
parathyroid, control of, by ammonium chloride (BOYD, AUSTIN, and DUGBY, A.), 860.
relation of guanidine to (COLLIP and CLARK, A.), 637.
methylated guanidines in urine in (KÜHNAN, A.), 196.
detection of guanidine substances in blood and urine in (KÜHNAN, A.), 1054.
- Tetra-acetylglucodaphnetin (LEONE, A.), 75.
- Tetra-acetylglucose, and its ζ -nitrate (OLDHAM, A.), 152.
velocity of mutarotation of (JONES and LOWRY, A.), 481.
- 6-(Tetra-acetyl- β -glucosido)-2:3:5-tribenzoylglucosyl fluoride (HELFERICH, BÄUERLEIN, and WIEOAND, A.), 386.
- β -Tetra-acetylglucosido-1-pyridinium *p*-toluenesulphonate (OHLLE and SPENCKER, A.), 1126.
- Tetra-acetylglucosylmethylaminoacetic acid, ethyl ester and amide (MAURER, A.), 602.
- Tetra-acetylmannose, bromo- (LEVENE and SOBOTKA, A.), 601.
- Tetra-*p*-anisylsuccinodinitrile (LÖWENBEIN and GAGARIN, A.), 168.
- ϵ -Tetra-*p*-anisyltruxilldiol, and its anhydride (STOERMER, NEUMAERKER, and SCHMIDT, A.), 290.
- Tetra-aquoethylenediamminocuprie perchlorate (MORGAN and BURSTALL, A.), 1027.
- Tetrazobenzoylperylene, preparation of (PEREIRA and COMP. NAT. MATIÈRES COLORANTES ET MANUF. PROD. CHIM. DU NORD RÉUNIES, (P.), B., 86.
- Tetrazobenzoyl-5:5'-dimethyldihydroindigotin (POSNER, STOCKEN-SCHNEIDER, NEUMANN, NACHRING, MEYER, and BEISSNER, A.), 1155.
- Tetra-*n*-butylammonium salts (HAGER and MARVEL, A.), 1232.
- Tetracarboethoxy-*l*-arabinose (HAWORTH and MAW, A.), 940.
- Tetracarboethoxy-*l*-xylose (HAWORTH and MAW, A.), 940.
- Tetracarboethoxy-*l*-arabinose (HAWORTH and MAW, A.), 940.
- Tetracarboethoxy-*l*-xylose (HAWORTH and MAW, A.), 940.
- Tetradecane, $\alpha\zeta$ -dibromo- (CHUTT, A.), 1199.
- Tetradecane- $\alpha\zeta$ -dicarboxylic acid, dimethyl ester (CHUTT, A.), 499.
- Tetradecane- $\alpha\zeta$ -diol (CHUTT, A.), 499.
- cycloTetradecanone, and its semicarbazone (RUZICKA, STOLL, and SCHNIZ, A.), 615.
- n*-Tetradecoylacetone, and its copper salt (MORGAN and HOLMES, A.), 148.
- Tetradenia glauca*. See "Tsuzeu."
- δ -Tetra-(*p*-dimethylaminophenyl)ethane (DUTT, A.), 830.
- Tetra-(*p*-dimethylaminophenyl)ethylene diacetate (DUTT, A.), 831.
- 3:9-Tetraethylaminophenoxazonium salts (KEHRMANN, GRILLET, and BORGEAUD, A.), 1262.
- Tetraethyltruxilldiols (STOERMER, NEUMAERKER, and SCHMIDT, A.), 290.
- Tetraglucosan, manufacture of (KERN, (P.), B., 340.
and its trimethyl derivative (IRVINE and OLDHAM, A.), 153.
- Tetraglycylarsanilic acid (GIEMSA and TROPP, A.), 1162.
- Tetrahexosan (PICTET and SALZMANN, A.), 52.
- s*-Tetracyclohexyldiphenylethane (GRAY and MARVEL, A.), 43.
- Tetrahydroabietic acid. See Abietic acid, trihydroxy-.
- Tetrahydroacenaphthenone, and its derivatives (v. BRAUN and REUTTER, A.), 1139.
- Tetrahydroacenaphthene, 3-amino-, and its salts and acetyl derivative, and 3-hydroxy- (v. BRAUN and REUTTER, A.), 1139.
- dihydroxy- (SKITA, A.), 174.
- Tetrahydroacridine, and its derivatives (PERKIN and SEDGWICK, A.), 410.
- Tetrahydroanhydrodigitoxigenin (WINDAUS and FREESE, A.), 153.
- Tetrahydroanhydrodigitoxigenone, and its derivatives (WINDAUS and FREESE, A.), 153.
- 1:2:3:4-Tetrahydroanthranol, and amino-, and their derivatives (v. BRAUN and BAYER, A.), 173.
- Tetrahydroanthraquinol, and its acetate (SKITA, A.), 174.
- Δ s-Tetrahydroarsinoline, chloro- (ROBERTS, TURNER, and BURY, A.), 852.
- 2:3:7:8-Tetrahydrobenzodi- γ -thiopyrone (FINZI, A.), 1255.
- Tetrahydroberberine, derivatives of (SPÄTH and MOSETTIG, A.), 965.
- Tetrahydrobigitaligenin (CLOETTA, A.), 755.
- Tetrahydrocarbazole, derivatives of (COLLAR and PLANT, A.), 735;
(MANJUNATH and PLANT, A.), 1151.
- Tetrahydrocarbazolecarboxylic acids, and their salts and derivatives (COLLAR and PLANT, A.), 735.
- Tetrahydrocolumbamine, and its ethyl ether (SPÄTH and BURGER, A.), 964.
- α -Tetrahydrocodeine hydriodide (CAHN, A.), 1264.
- 5:6:7:8-Tetrahydro-2:4-dimethylquinoline, 6-hydroxy-, and its derivatives (RIEDEL, (P.), B., 513.
- Tetrahydroelmsene, structure and derivatives of (RUZICKA and PFEIFFER, A.), 1148.
- Tetrahydrojatroerrhizine, synthesis of (SPÄTH and QUIETENSKY, A.), 82.
- 2:3:8:9-Tetrahydro-7-ketobenzo-1:4-thiopyrone-10:6-heptathiazine (FINZI, A.), 1255.
- Tetrahydromethylcorycavidine, and its salts (v. BURCHHAUSEN, A.), 184.
- Tetrahydro- α -methylmorphimethine, chloro-, action of sodium and alcohol on (CAHN, A.), 1264.
- Tetrahydromorphinic acid (SPEYER and POPP, A.), 532.
- Tetrahydronaphthalene (*tetralin*), and α -chloro-, vapour pressure curves of binary mixtures of liquids with (WEISSEBERGER, HENKE, and KATSCHINKA, A.), 683.
- extraction of oil shales and lignites with (BERL and SCHMID, B.), 652.
- as wash oil (WEISSEBERGER, B.), 652.
- mercury compound of (NEUMANN, (P.), B., 965.
- Tetrahydronaphthalenes, bromonitro- (VESELY and CHUDOŽILOV, A.), 58.
- hydroxy-, manufacture of (RIEDEL and SCHROETER, (P.), B., 216.
- 1:2:3:4-Tetrahydronaphthyl-1-acetyl chloride (v. BRAUN and REUTTER, A.), 1139.
- ar*-Tetrahydro- α -naphthylamine, and its benzoyl derivative (LINDNER and SIEGEL, A.), 410.
- ar*-Tetrahydro-*p*-naphthylamine, 2-methylquinolino synthesis with (LINDNER and STAUFER, A.), 410.
- 2-*ac*-Tetrahydro- β -naphthylamino-1:6:8-trinitronaphthalene (VAN DER KAM, A.), 1240.
- [*ac*-Tetrahydro- β -naphthyl]aniline, 2:4-dinitro- (VAN DER KAM, A.), 1240.
- β -1-Tetrahydronaphthylethyl alcohol and bromide (v. BRAUN and REUTTER, A.), 1139.
- β -1-Tetrahydronaphthylpropionic acid, and its derivatives (v. BRAUN and REUTTER, A.), 1139.
- d*-Tetrahydropalmitine, synthesis of (SPÄTH and MOSETTIG, A.), 965.
- Tetrahydropalmatine, and its ethyl ether, and their hydrochlorides (SPÄTH and BURGER, A.), 964.
- Tetrahydrophenanthraquinone (v. BRAUN and BAYER, A.), 173.
- Tetrahydrophenanthrol (v. BRAUN and BAYER, A.), 173.
- Tetrahydroisophthalic acid, and its derivatives (FARMER and RICHARDSON, A.), 1039.
- Δ^2 -Tetrahydrophthalic anhydride, action of magnesium alkyl iodides on (BERLINGOZZI and MAZZA, A.), 835.
- Tetrahydropyran, 4-chloro- (BORSCHKE and FRANK, A.), 409.
- Tetrahydropyran-4-ol, and its *p*-nitrobenzoate (BORSCHKE and FRANK, A.), 409.
- Tetrahydropyromucic acid, dissociation constant of (McCAY and SCHMIDT, A.), 354.
- Tetrahydro-1:4-pyrones (BORSCHKE and FRANK, A.), 409.
- Tetrahydroisquinoline, and its derivatives (RIEDEL, (P.), B., 513.

- Tetrahydrotricyclopentadiene (STAUDINGER and BRUNSON), A., 719.
 Tetrahydroxanthene (v. BRAUN and BAYER), A., 1253.
 Tetrahydroxydi-iodostannic acid. See under Tin.
 Tetralin. See Tetrahydronaphthalene.
 Tetramercuriacetanilide, acetate halogenation of (BERNARDI), A., 966.
 2:3':5:6-Tetramethoxy-2-benzylidene-1-hydrindone (PERKIN, RAY, and ROBINSON), A., 733.
 2:6:2':6'-Tetramethoxydiphenquinone, 3:3'-dibromo- (LEVINE), A., 516.
 3:5:3':5'-Tetramethoxydiphenquinone, 2:2'-dichloro- (LEVINE), A., 1244.
 Tetramethoxyflavylium ferrichlorides (ROBERTSON and ROBINSON), A., 1043.
 2:3:5:6-Tetramethoxyphenanthrene-8-carboxylic acid (WARNAT), A., 185.
 4:6:3':4'-Tetramethoxy-3-phenylchroman-1:2-dione (NIERENSTEIN), A., 954.
 4:6:3':4'-Tetramethoxy-3-phenylchroman-2-one *p*-bromophenylhydrazine, and 1-oximino- (NIERENSTEIN), A., 954.
 4:6:3':4'-Tetramethoxy-3-phenylcoumarin, 2-hydroxy-, and its acetyl derivative (NIERENSTEIN), A., 954.
 α - and β -Tetramethoxyvinylidihydrophenanthrenes (GOTO), A., 1161.
 2:3:5:6-Tetramethoxy-8-vinylphenanthrene (WARNAT), A., 185.
 Tetramethyladipic acids, synthesis of, electrolytically (FARMER and KRACOVSKI), A., 1124.
 $\beta\gamma$ -Tetramethyldiamino- $\beta\gamma$ -dimethylbutane (VELGHE), A., 1044.
 3:3'-Tetramethyldiaminodiphenyl (DUTT), A., 831.
 Tetramethyldiaminodiphenyl-9:10-dihydroanthracene, dichloro- (BARNETT, MATTHEWS, and WILTSHIRE), A., 1030.
 3:6-Tetramethyldiamino-9-phenylfluorene, and its acetate (DUTT), A., 831.
 Tetramethyldiaminotriphenediazoxine (KEHRMANN, GRILLET, and BORGEAUD), A., 1262.
 Tetramethylammonium stannous iodide (KARANTASSIS), A., 276.
 Tetramethylarsonium stannous iodide (KARANTASSIS), A., 276.
 Tetramethylbenzidine, 2:2'-diamino-, 2-nitro-, and dinitro-, and their diacetyl derivatives (BELL and KENYON), A., 1241.
 1:3:4:6-Tetramethylbenzoxazole (v. AUWERS, BUNDESMANN, and WIENERS), A., 609.
 Tetra-*p*-methyl- β -benzpinacolin (WIELAND, VOM HOVE, and BÖRNER), A., 62.
 2:5:2':5'-Tetramethyl-1:1'-dipyrryl (PIERONI and VEREMEENCO), A., 1167.
 Tetramethyldistibine, compound of, with methyl iodide (MORGAN and DAVIES), A., 507.
 Tetramethylene sulphide, and its derivatives (THIERRY), B., 116.
 Tetra-(4-methyl-2-ethyl-3-propionylpyrryl)ethane (FISCHER and KLARER), A., 412.
 Tetra-(4-methyl-2-ethyl-3-propionylpyrryl)ethylene (FISCHER and KLARER), A., 412.
 Tetramethyl- γ -fructose, oxidation of (McOWAN), A., 941.
 Tetramethylgluconolactone (LEVENE and MAYER), A., 49.
 Tetramethylglucose, velocity of mutarotation of (JONES and LOWRY), A., 481.
 mutarotation of, with methyl alcohol as solvent (FAULENER and LOWRY), A., 1026.
 1:3:5:5-Tetramethylhydantoin (BILTZ and SLOTTA), A., 1046.
 9:10-Tetra-2-methylindolylidihydroanthracene, and its silver salt (MINGOIA), A., 1158.
 1:4:5:7-Tetramethylisatin (HELLER, FUCHS, JACOBSON, RASCHIG, and SCHÜTZE), A., 621.
 α - and β -Tetramethylisatoids (HELLER and LAUTH), A., 740.
 2:2:3:3-Tetramethyl-1-methylenecyclohexane. See Dimethyl- γ -cyclogeraniolene.
 Tetramethyloxindirubin, reduction of (STOLLÉ and STAMM), A., 1253.
 2:3:3:4-Tetramethylcyclopentane-1:2-dicarboxylic acid, and its anhydride (HOUBEN and FRANKUCH), A., 1252.
 1:2:2:3-Tetramethylcyclopentyl aminomethyl ketone, and its derivatives (RUPE and FEHLMANN), A., 399.
 1:2:2:3-Tetramethylcyclopentyl β -bromoethyl ketone (RUPE and PERRET), A., 406.
 1:2:2:3-Tetramethylcyclopentylbromomethane, and its derivatives (RUPE and FEHLMANN), A., 399.
 1:2:2:3-Tetramethylcyclopentyl bromomethyl ketone, and its derivatives (RUPE and FEHLMANN), A., 399.
 1:2:2:3-Tetramethylcyclopentyl dibromomethyl ketone (RUPE and FEHLMANN), A., 399.
 1:2:2:3-Tetramethylcyclopentyl-1-carbinol, esters of (RUPE and PERRET), A., 406.
 derivatives of (RUPE and FEHLMANN), A., 398.
 1:2:2:3-Tetramethylcyclopentyl dimethoxymethyl ketone, and its semicarbazone (RUPE and FEHLMANN), A., 399.
 1:2:2:3-Tetramethylcyclopentyl-1-glycol, and its esters (RUPE and PERRET), A., 406.
 1:2:2:3-Tetramethylcyclopentyl β -hydroxyethyl ketone (RUPE and FEHLMANN), A., 399.
 and its esters (RUPE and PERRET), A., 406.
 1:2:2:3-Tetramethylcyclopentyl hydroxymethyl ketone, and its derivatives (RUPE and FEHLMANN), A., 399.
 optically active esters of (RUPE and PERRET), A., 406.
 1:2:2:3-Tetramethylcyclopentylmethylamine, and its derivatives (RUPE and FEHLMANN), A., 399.
 1:2:2:3-Tetramethylcyclopentyl methyl ketone, esters and derivatives of (RUPE and PERRET), A., 406.
 derivatives of (RUPE and FEHLMANN), A., 399.
 Tetramethylpiperazinium dichloride (v. BRAUN, KÜHN, and GOLL), A., 1259.
 1:1:4:4-Tetramethylpiperazinium hydroxide, and its salts (ABDERHALDEN and HAAS), A., 79.
 2:2:6:6-Tetramethylpiperidine-4-carboxylic acid, melting point of (STEINKOPF and OHSE), A., 1044.
 Tetramethylpurpuric acid, salts of (FICHTER and KERN), A., 742.
 1:3:4:5-Tetramethylpyrazole, salts of (ROJAHN and KÜHLING), A., 847.
 Tetramethylpyridyl-3:5-dialkine (OPARINA), A., 844.
 Tetramethyltetrahydrodianthranyl (BARNETT and MATTHEWS), A., 618.
 Tetramethyltetrahydrodianthrol (v. BRAUN and BAYER), A., 729.
 1:4:5:8-Tetramethylthianthren, and its disulphone (SEN and RAY), A., 734.
 1:3:7:9-Tetramethylxanthine, physiological action of (PADERI), A., 974.
 ϵ -Tetra-*p*-phenyltruxillidol, and its anhydride (STOERMER, NEUMAERKER, and SCHMIDT), A., 290.
 Tetraphenylmethane, coloured derivatives of (KEHRMANN, GOLDSTEIN, and BRUNNER), A., 558; (KEHRMANN and BRUNNER), A., 607.
 3:4:6:6-Tetraphenyl-1:2(6)-oxazine, 5-hydroxy-, and its derivatives (KÖHLER), A., 530.
 $\alpha\alpha\gamma\epsilon$ -Tetraphenyl- Δ^{88} -pentadien- α -ol (KÖHLER and BUTLER), A., 713.
 2:3:4:5-Tetraphenyl- $\Delta^{2:4}$ -cyclopentadienone (LÖWENBEIN and ULICH), A., 171.
 and its *p*-dimethylaminoanil (ZIEGLER and SCHNELL), A., 57.
 $\alpha\alpha\gamma\epsilon$ -Tetraphenyl- $\Delta^{2:6}$ -pentatriene (KÖHLER and BUTLER), A., 713.
 $\alpha\alpha\gamma\gamma$ -Tetraphenylpropane- $\alpha\beta$ -diol (LÉVY), A., 399.
 Tetraphenyltruxillidols (STOERMER, NEUMAERKER, and SCHMIDT), A., 290.
 Tetrapyrrolethane, synthesis of (GODNEV), A., 183.
 Tetraethiocyanatodiamminochromic acid, salts, solubility and light absorption of (HANTZSCH and CARLSOHN), A., 1202.
 $\alpha\beta\gamma\gamma$ -Tetraethioethylpropane (ROJAHN and LEMME), A., 146.
 ϵ -Tetraolyltruxillidols, and their derivatives (STOERMER, NEUMAERKER, and SCHMIDT), A., 290.
 Tetrazole, amino-, preparation of (STOLLÉ and SCHICK), (P.), B., 566.
 Tetrazoles, production of (SCHMIDT), (P.), B., 932; (SCHMIDT and KNOLL & Co.), (P.), B., 1007*.
 Tetrazothiocarbodibenzidine chloride (ROSSI and CECCHETTI), A., 513.
 Tetrolic acid, cholesteryl ester (SOC. CHEM. IND. IN BASLE), (P.), B., 141.
 Tetryl. See Phenylmethylnitroamine, 2:4:6-trinitro-.
 Textiles, effects of humidity on, and its control during strength tests (PARKER and JACKMAN), B., 530.
 humidifying and impregnation of (MANZONI and MÜLLER), (P.), B., 357*.
 impregnation of (LANGE), (P.), B., 122*.
 wetting-out agents for (SECK and LACHMANN), B., 913.
 containing animal fibres, products facilitating wetting-out of, with acid liquids (CHEM. FABR. POTT & Co. and POSPIECH), (P.), B., 403.
 drying of (JULIEN), (P.), B., 269*.
 apparatus for (HAAS), (P.), B., 235*, 1010.

Textiles, sizes for (BRITISH CELANESE, RYLEY, and AWCOCK), (P.), B., 189.
 size softener for (MARSH and AISCHÉ), (P.), B., 189.
 degreasing of (ZIMMERLI CHEM.-TECH. FABR.), (P.), B., 404*.
 de-waxing, de-greasing, or de-oiling of (MCKELLAR and MAC-GREGOR), (P.), B., 913.
 carbonising of (JAHR), (P.), B., 740.
 finishing of (BRUGÈRE), (P.), B., 154; (RADUNER & Co.), (P.), B., 403.
 with maize and potato starches (EKHARD), B., 706.
 finishing and ornamentation of (HUEBNER), (P.), B., 537.
 dyeing of. See under Dyeing.
 printing of (GEIGY), (P.), B., 124.
 laundering of, after bleaching (KOHNSTAMM & Co.), (P.), B., 123.
 washing of (DUHAMEL and COMP. GÉN. IND. TEXTILES), (P.), B., 532.
 fireproofing of (CRAIG and SPENCE & SONS), (P.), B., 152.
 weighting, mordanting, and waterproofing of (SONNERY), (P.), B., 189.
 treatment of, with liquids (SCHMID-KOECHLIN), (P.), B., 706.
 apparatus for (BRANDWOOD, STOCKER, and TWYVER WORKS), (P.), B., 271*; (STAPLETON and STROUD), (P.), B., 317.
 centrifugal machines for (WOLFER and OBERMAIER & Co.), (P.), B., 87*.
 with synthetic resins (BRITISH CYANIDES Co., ROSSITER, and DAVIS), (P.), B., 977.
 to obtain effects of colour and lustre (N.V. NEDERLANDSCHE KUNSTZIDEFABRIEK), (P.), B., 820*.
 treatment of continuous lengths of (LAMBRETTE), (P.), B., 740.
 felting process for (RICALENS), (P.), B., 782.
 production of pattern effects on (HEBERLEIN & Co.), (P.), B., 485.
 production of lustrous effects on, with gelatin (BRYLINSKI; BRANDT), B., 123.
 protection of, against insects (KENDALL), (P.), B., 314.
 protection of, from mildew (BRITISH DYE STUFFS CORP., RENS HAW, and FAIRBROTHER), (P.), B., 1009.
 printed, "aktivin" in finishing of (FEIBELMANN), B., 484.
 manufacture of cellulose material for (BURLIN, LEICESTER, and HOLMAN), (P.), B., 436.
 microscopical examination of (LAWRIE), B., 355.
 Textile fibres. See under Fibres.
 Textile materials, treatment of (PHAIR and KOHNSTAMM & Co.), (P.), B., 945.
 fibrous, washing of (DUHAMEL and COMP. GÉN. DES IND. TEXTILES), (P.), B., 912.
 apparatus for acidulating (MOLINGHEN and GAYE), (P.), B., 914.
 Textile processes, industrial, regulation of atmospheric humidity in (OBERMILLER), B., 312.
 Thalleoquinine reaction (HARGREAVES), A., 967.
 Thallium, arc and spark spectra of (MCQUARRIE), A., 2.
 fluorescence spectrum of (LORIA), A., 10.
 vapour, ultra-violet absorption spectrum of (FRAYNE and SMITH), A., 214.
 spectral lines of gold and (NAGAOKA and FUTAGAMI), A., 1071.
 electrode potential of (VOLLSTEIN), A., 803.
 heats of solution of, in water, weak acids, and alcohols (DE FORCRAND), A., 685.
 heats of reaction of, with various alcohols, acids, and water (DE FORCRAND), A., 476.
 Thallium alloys with antimony, potential of (VINOGOROV and PETRENKO), A., 361.
 Thallium compounds, use of, in organic chemistry (CHRISTIE and MENZIES), A., 55; (FEAR and MENZIES), A., 904.
 Thallium double chlorides and sulphates (BENRATH, WEILAND, HAMACHER, and KIRCHHEISEN), A., 369.
 caesium chlorides (MALQUORI), A., 809.
 suboxide (AUFENAST and TERREY), A., 811.
 silicates (VESTERBERG and WILLERS), A., 695.
 Thallous salts, determination of, volumetrically, with potassium iodate (BERRY), A., 376.
 Thallous silver bromide (BARTH and LUNDE), A., 896.
 chloride, solubility of, in salt solutions, and its heats of solution (BUTLER and HISCOCKS), A., 1209.
 sulphate, compound of hydrogen chloride and (EPHRAIM), A., 587.
 cerous sulphate (ZAMBONINI and RESTAINO), A., 1113.

Thallium organic compounds:—

Thallium dialkyl halides, compounds of, with pyridine (KRAUSE and v. GROSSE), A., 1112.
 Thallium detection and determination:—
 detection of (GASPAR Y ARNAL), A., 703.
 determination of (STRECKER and DE LA PEÑA), A., 262.
 determination of, volumetrically (ZENTL and RIENÄCKER), A., 703.
 determination of, volumetrically, in "Zelio" preparations (BODNAR and TERÉNYI), B., 997.
 determination of, in mouse poisons (MACH and LEPPER), B., 390.
 Thebaine, constitution of (GULLAND and ROBINSON), A., 83.
 Thenardite, manufacture of (GEWERKSCHAFT BURBACH and WIENER), (P.), B., 192; (KALI-FOESCHUNGS-ANSTALT), (P.), B., 360.
 Theobromine, manufacture of, from cacao waste (TIEDE), (P.), B., 384.
 effect of, on uric acid excretion (CLARK and DE LORIMIER), A., 974.
 derivatives, diuretic action of (VIETH and LEUBE), A., 200.
 Theophylline, bromo- (YOSHITOMI), A., 81.
 Thermal conductivity of gases (GREGORY and ARCHER), A., 231; (BUSCH), A., 669.
 Thermionic effect (v. RASCHEVSKY), A., 330, 1188.
 Thermochemical data, correction of (ROTH), A., 477.
 Thermochemistry of gas reactions (BODENSTEIN, GÜNTHER, and HOFFMEISTER), A., 910.
 Thermo-couples, measurement of temperature by, in unequally heated enclosures (MANDELL), B., 79.
 protection of, with silica tubes (RAGATZ and HOUGEN), B., 695.
 portable device for, compensated for heat losses (BOYER and BUSS), B., 647.
 Thermodynamics and velocity of reaction (JOUQUET), A., 362, 913; (SCHEFFER and BRANDSMA), A., 913.
 of distribution of constituents of mixtures (KLEEMAN), A., 1211.
 of non-isothermal systems (EASTMAN), A., 797.
 of surfaces (GAY), A., 578, 682.
 Thermoelectric element (HERMANN and THERMO ELECTRIC BATTERY Co.), (P.), B., 371.
 Thermometers, gallium-in-quartz, graduated to 1000° (BOYER), B., 79.
 helium and hydrogen, comparison of scales of (VAN AGT and ONNES), A., 264.
 platinum, for low temperature scale (LOOMIS and WALTERS), A., 141.
 small resistance (TAYLOR), A., 142.
 spirit, effect of acetone as an impurity in (HIGGINS), B., 855.
 Thermoplastic compositions (HOUGH), (P.), B., 67.
 Thermo-regulator (WING and THOMPSON), A., 141; (HUME), B., 903.
 electrical (LOMBARD), A., 931.
 Thermostats (SALERNI), (P.), B., 1000.
 working of, at low temperatures (FOX and MANKODI), A., 378.
 methylene chloride in (BRODTON), (P.), B., 472.
 Thianthrens, substituted, use of, in pharmacy (HERMINGHAUS and WINTHROP CHEMICAL Co.), (P.), B., 851.
 Thianthren series, synthesis in (SEN and RAY), A., 734.
 Thiasins in blood (BENEDICT, NEWTON, and BEHRE), A., 421.
 Thiazoles (BOGERT and STULL), A., 183, 310; (BOGERT and CORBITT), A., 187, 531; (BOOERT and ALLEN), A., 743.
 manufacture of (SEBELL, BEDFORD, and GOODYEAR TIRE & RUBBER Co.), (P.), B., 771.
 derivatives of (STEPHEN and WILSON), A., 1262.
 Thiazole dyes (YAMADA), A., 850.
 Thickeners, apparatus for separating, from liquids (WICKES), (P.), B., 857.
 α-Thienanilide *o*-disulphide (BOGERT and STULL), A., 310.
 4-Thienoyloxy-2:2:6:6-tetramethylpiperidine-4-carboxylic acid, derivatives of (STEINKOFF and OHSE), A., 1044.
 2-Thienoyl-*p*-phenetidine (STEINKOFF and OHSE), A., 1044.
 2-Thienoylquinine, and its chloroplatinate (STEINKOFF and OHSE), A., 1044.
 1-α-Thienylbenzthiazole (BOGERT and STULL), A., 310.
 α-Thienylmorphine, and its salts (v. BRAUN, KÜHN, and SIDDIQUI), A., 851.
 Thioantimonates. See under Antimony.
 Thio-aryl groups, insertion of (BROOKER and SMILES), A., 947.
 Thiobenzoyl-*p*-tolylamine (CHAPMAN), A., 1138.
 Thiocarbamic acid, *p*-nitrobenzyl ester (POGOR), A., 159.

- Thiocarbamide, constitution of, and its acetyl derivatives (HUGERSHOFF), A., 156.
- Thiocarbamides, cyclic, preparation of (GUGLIAMELLI and NOVELLI), A., 72.
- disubstituted symmetric, preparation of (SILESIA VEREIN CHEM. FABR. and FLEMMING & KLEIN WISSENSCH. CHEM. LABORATORIUM), (P.), B., 721*.
- symmetrical aryl-disubstituted (FLEMMING), (P.), B., 464.
- Thiocarbamide, formation of triphenylguanidine and phenylthiocarbamide from (NAUNTON), A., 279.
- Thiocarbimides (isothiocyanates), influence of chemical constitution on odour of (DYSON), B., 215.
- aromatic, action of magnesium butyl bromide on (WORRALL), A., 161.
- Thiocarbonic acid:—
- tri*Thiocarbonic acid, derivatives of (GUERRY), (P.), B., 141.
- Thiocarbonylbenzidine, derivatives of (LE FÈVRE and TURNER), A., 1131.
- Thiocyanates, recovery of (DARRIN and KOPPERS Co.), (P.), B., 236, 583.
- effect of, on diastase (BITTORF and v. FALKENHAUSEN), A., 1058.
- use of, in seed disinfection (HOLZVERKOHLUNGS-IND.), (P.), B., 960.
- effect of, on respiration (TARUGI), A., 190, 1170.
- in human serum (SCHREIBER), A., 192.
- double, manufacture of (FRIEDENTHAL), (P.), B., 406.
- Thiocyanic acid, preparation of aqueous solutions of (GLUUD, KELLER, and KLEMPF), A., 943.
- formation of, in the putrefying animal organism (SENSI and REVELLO), A., 1058.
- salts, determination of, electrovolumetrically (ZANKO), A., 910.
- ammonium salt, action of light on concentrated solutions of (HOLMES), A., 920.
- decomposition of, into carbon disulphide and mellon (GLUUD, KELLER, and KLEMPF), B., 1011.
- potassium salt, action of, with light metals and their carbides (BIESALSKI and VAN ECK), A., 1218.
- silver salt, photochemistry of (SCHWARZ and DIEFFENBACHER), A., 585.
- 9-anthryl and *p*-nitrobenzyl esters (FOOTNER and SMILES), A., 159.
- determination of (NAKASONO and INOKO), A., 1115.
- Thiocyanic acid, iodo-, lead complex salts (VOURNAZOS), A., 1015.
- Thiocyanogen and its application in volumetric analysis (KAUFMANN), B., 165.
- in fat analysis (KAUFMANN), B., 447.
- Thiocyano-groups, introduction of, into organic compounds (KAUFMANN and OEHNING), A., 392.
- 1:3:4-Thiodiazine, 5-hydroxy-2-thiol, disulphide of (BOSE), A., 1159.
- Thiodiazines (BOSE), A., 1159.
- 1:3:4-Thiodiazole, 2,5-dithiol, action of, with organic dihalides (RÂY and GUHA), A., 744.
- 1:3:4-Thiodiazole-5-thiolacetic acid, 2-thiol-, and its potassium salt and disulphide (BOSE), A., 1159.
- Thioindigo derivatives (DODD, SPRENT, and UNITED ALKALI Co.), (P.), B., 577.
- Thioindigo dyes, manufacture of (JOYCE and CHEMICAL FOUNDATION), (P.), B., 265.
- 3-Thionacenaphthene-1:2:4:5-heptatetrazine (GUHA and DEY), A., 417.
- Thionacetic acid, esters (SAKURADA), A., 950.
- 3-Thionalloxan-1:2:4:5-heptatetrazine (GUHA and DEY), A., 417.
- 2-Thion-5-anilinomethylene-4-thiazolidone (DAINS and DAVIS), A., 530.
- Thionaphthen, reduction of (FRICKE and SPILKER), A., 409.
- Thionaphthen, *di*- and *tri*-chloro-2-hydroxy- (HERZ, BRUNNER, and GRASSELLI DYESTUFF CORP.), (P.), B., 816.
- Thionbenzoic acid, salts of (SAKURADA), A., 950.
- Thionbisdimethyl-1:2:5-triazole (GUHA and DEY), A., 417.
- Thionbisphenanthra-1:2:5-triazole (GUHA and DEY), A., 417.
- 3-Thioncamphor-1:2:4:5-heptatetrazine (GUHA and DEY), A., 417.
- 3-Thion-6:7-diphenyl-1:2:4:5-heptatetrazine (GUHA and DEY), A., 417.
- Thionine, reduction of, by organic substances (AUBEL and GENEVOIS), A., 963.
- Thion- β -naphthoic acid, ethyl ester (SAKURADA), A., 950.
- 2-Thion-3-phenyl-5-anilinomethylene-4-thiazolidone, and its hydr-azone (DAINS and DAVIS), A., 531.
- 2-Thion-3-phenyl-5-*p*-methoxyanilinomethylene-4-thiazolidone (DAINS and DAVIS), A., 531.
- 2-Thion-3-phenyl-5- α -naphthylaminomethylene-4-thiazolidone (DAINS and DAVIS), A., 531.
- 2-Thion-3-phenyl-4-thiazolidone (DAINS and DAVIS), A., 530.
- Thionpropionic acid, amyl ester (SAKURADA), A., 950.
- 2-Thion-3-*p*-tolyl-5-anilino-4-thiazolidone (DAINS and DAVIS), A., 531.
- Thionyl bromide. See under Sulphur.
- Thionylaniline, reaction between magnesium organic halides and (GILMAN and MORRIS), A., 1132.
- 2:3-Thionylanthrakgallol (GREEN), A., 1042.
- Thionyl-*p*-azo- α -aminotoluene, purification of (KALLE & Co. and SPÖNGERTS), (P.), B., 772.
- 1:2-Thionyl-7-chlorothionylantrapurpurin (GREEN), A., 1041.
- Thionylhystazarin (GREEN), A., 1041.
- 1:2-Thionylpurpurin (GREEN), A., 1041.
- Thiophen, arsenic compounds of (FINZI), A., 186.
- derivatives of (SCHEIBLER and RETTIG), A., 843.
- Thiophen, 3-nitro- (STEINKOPF and MÜLLER), A., 956.
- Thiophens, amino-, diazotisability of (STEINKOPF and MÜLLER), A., 956.
- Thiophen series (STEINKOPF and OHSE), A., 1044.
- Thiophen-2-arsinic acid, 5-bromo-, 5-iodo-, and nitro-5-iodo- (FINZI), A., 187.
- Thiophen-2-carboxyl chloride, and *dibromo*-, aldehydes from (ROJAHN and SCHULTEN), A., 842.
- Thiophen-2-carboxylic acid, amino-, hydrochloride and acetyl derivative of (STEINKOPF and MÜLLER), A., 956.
- Thiophen-2-diazonium chloride (STEINKOPF and MÜLLER), A., 956.
- Thiophen-eucaine-A, and its salts (STEINKOPF and OHSE), A., 1044.
- Thiophen-stovaine, and its salts (STEINKOPF and OHSE), A., 1044.
- Thiosulphates. See under Sulphur.
- Thomson effect, influence of strain on (SMITH), A., 115.
- Thorium, γ -ray spectrum of (THIBAUD), A., 333.
- ultra-violet and Röntgen-ray spectra of (DAUVILLIER), A., 1072.
- disintegration products in spectrum of (NAGAOKA and FUTAGAMI), A., 1077.
- long range α -particles from (PHILIPP), A., 770.
- thermionic emission of (ZWICKER), A., 1183.
- ionisation of active deposit of (ERIKSON), A., 4.
- positive substances in active deposit of (ERIKSON), A., 1190.
- isomorphism of cerium and (SCAGLIARINI), A., 1196.
- adsorption of hydrogen by (SIEVERTS and ROELL), A., 810.
- Thorium salts, sensitisation to Röntgen rays by (ELLINGER and GANS), A., 320.
- reactions of, with sodium acetate and tartrate (BRITTON), A., 586.
- hydroxide, reaction of "aluminon" with (MIDDLETON), A., 930.
- oxide, varieties of, and their catalytic activity (LEVI), A., 114.
- Thorium organic compounds:—
- Thorium compound of reaction product of tyrosine and formaldehyde (CHEM. FABR. FLORA), (P.), B., 464.
- Thorium detection and determination:—
- detection of (PAVELKA), A., 1222.
- determination of, with phenylarsinic acid (RICE, FOGG, and JAMES), A., 593.
- Thorium-B and -C + D, number of particles in β -ray spectra of (GURNEY), A., 990.
- Thorium-C and -C', α -rays from (ROSENBLUM), A., 772.
- and their passage through gases (MEITNER and FREITAG), A., 772.
- Thorium-X, action of, on ammoniacal fermentation in urine (MAUBERT), A., 759.
- Thorium minerals, disintegration of (HOLMES), A., 654.
- Threads from cellulose derivatives, increasing the durability of (LE PLAY), (P.), B., 401.
- containing artificial filaments, treatment of (BRITISH CELANESE, LTD., BRIGGS, KIDD, and PALMER), (P.), B., 1008.
- artificial, manufacture of (LAHOUSSE and Soc. FABR. SOIE "RHODIASETA"), (P.), B., 580.
- apparatus for (GRILLET and Soc. FABR. SOIE "RHODIASETA"), (P.), B., 234* ; (LEVY), (P.), B., 357*.
- from *N*-substituted cellulose thiourethanes (LILIENTHAL), (P.), B., 532.
- effect, manufacture of (FARB. v. BAYER & Co.), (P.), B., 537.
- from animal fibres (FARB. v. BAYER & Co.), (P.), B., 318.

- Thuja**, isomeric (PAOLINI), A., 175.
- Thunderbolts**, colour and composition of (MATHIAS), A., 143.
- Thyme**. See *Thymus vulgaris*.
- Thymol**, preparation of (AUSTERWEIL), (P.), B., 109*.
- synthesis of, from isopropyl alcohol (BERT and DORIER), A., 164.
- α -naphthylurethane from (FRENCH and WIRTEL), A., 830.
- Thymolsulphonaphthalein**, and its salts and derivatives (ORNDORFF and CORNWELL), A., 610.
- Thymolsulphonaphthalin**, zinc salt (ORNDORFF and CORNWELL), A., 611.
- Thymus** (*thymus gland*), histone of (FELIX and HARTENECK), A., 1167.
- Thymus capitatus*, essential oils from (PUXEDDU), B., 930.
- Thymus herba barona*, essential oils from (PUXEDDU), B., 930.
- Thymus vulgaris*, essential oil of, from Sukhum, Caucasus (KRAS-TELEVSKI), B., 340.
- Thymus-nucleic acid**, partial decomposition of (STEUDEL), A., 853.
- Thyreoparathyroidectomy**, effect of calcium and phosphates on calcium and phosphorus metabolism in (GREENWALD), A., 425.
- Thyroid** (*thyroid gland*), iodine content of (HERGLOZ), A., 1051.
- partition of iodine in (MEYER), A., 969.
- action of, on metabolism (ABELIN, GOLDENER, and KOBORI), A., 973.
- amino-acids in globulin of (ECKSTEIN), A., 636.
- effect of, on growth factors in blood (ASHER and UCHIDA), A., 206.
- effect of feeding with, on sugar tolerance (MARKS), A., 644.
- bio-assay of (HUNT), B., 27.
- evaluation of preparations of (CAMERON and CARMICHAEL), B., 897.
- Thyroidectomy**, results of (ARDERHALDEN), A., 318.
- Thyroxin** (HARINGTON), A., 644, 724.
- tautomerism of (HICKS), A., 621.
- Tiemannite**, crystal structure of (HARTWIG), A., 664; (DE JONG), A., 996.
- Tiger lily**. See *Lilium tigrinum*.
- Tiles**, composition for manufacture of (BACKHOUSE and OLIVER), (P.), B., 1015.
- ceramic safety (BOOZE and NORTON Co.), (P.), B., 980.
- Tilia platyphyllos* (linden), constituents of the bark of (ZELLNER), A., 983.
- Timber**. See *Wood*.
- Tin**, structure of (COLLINS), A., 106.
- electrodeposition of (MCLHENNEY and VULCAN DETINNING Co.), (P.), B., 922.
- extraction of, electrolytically, from alloys containing lead (BONDI and NEURATH), (P.), B., 985.
- recovery of (STACK and AMER. SMELTING & REFINING Co.), (P.), B., 163.
- from alloys containing iron (WÜST), (P.), B., 197.
- from bronze scrap or residues (LEWIN), (P.), B., 369.
- from ores and residues (SOC. D'ELECTROCHIMIE, D'ELECTRO-MÉTALLURGIE ET DES ACIÉRIES ELECTRIQUES D'UGINE), (P.), B., 885.
- from tinned iron (HICKEY), (P.), B., 756.
- from tin-plate scrap (GUILLET), (P.), B., 885.
- and its salts, use of chlorine in recovery of, from tin-plate scrap (MANTELL), B., 410.
- electrolytic recovery of, from tinned iron (ADAM), (P.), B., 757.
- removal of arsenic from (HARRIS), (P.), B., 921.
- spectrum of, with an electrodeless discharge (ROBERTSON), A., 550.
- spectrum of, in a magnetic field (VAN DER HAART), A., 874.
- absorption spectrum of the vapour of (FRAYNE and SMITH), A., 550.
- ultra-violet absorption spectrum of the vapour of (ZUMSTEIN), A., 453.
- electrical resistance of (SIZOO and ONNES), A., 230.
- effect of elastic deformation on the magnetic disturbance of the superconductivity of (SIZOO, DE HAAS, and ONNES), A., 667.
- liquid, surface tension of (BIRCUMSHAW), A., 895.
- and tin chloride, equilibria of lead and lead chloride with (LORENZ, FRAENKEL, and GANZ), A., 799.
- solubility of hydrogen in (BIRCUMSHAW), A., 344.
- equilibrium of, with iron in the molten state (RUER and KUSCHMANN), A., 786.
- cementation of copper, nickel, and their alloys by (GUILLET), B., 588.
- Tin**, precipitation of, from solutions containing alkali oxy-salts of tin and arsenic (HARRIS), (P.), B., 156.
- ancient, corrosion of (BANNISTER), B., 327, 792*.
- antagonism of silver and, in biology (DREWINA and BOHN), A., 1274.
- Tin alloys** with aluminium and copper, copper-rich (STOCKDALE), B., 279, 792*.
- with bismuth, electrolysis of (KREMAN, KRIEGHAMMER, and TRÖSTER), A., 801.
- with cadmium, electrolysis of (KREMAN and BAUKOVAC), A., 801.
- and with zinc, density of (SAUERWALD), A., 786.
- with calcium and with magnesium (HUME-ROTHERY), A., 356.
- with copper, hardness of (MALLOCK), A., 671.
- equilibrium of (ISHIARA), B., 671.
- α -phase boundary in (STOCKDALE), B., 328*.
- with copper and phosphorus (GLASER and SEEMANN), B., 411.
- with copper or silver, structure of (WESTGREN and PHRAGMÉN), A., 1084.
- with iron (WEVER and REINECKEN), A., 475.
- with lead, mixed, manufacture of (THEWS), B., 883.
- with lead and antimony, hardening of (GUILLET), B., 588.
- with silver (MURPHY), B., 278, 792*.
- electrolysis of (KREMAN and BAYER), A., 802.
- with zirconium (COOPER and KEMET LABORATORIES Co.), (P.), B., 133.
- Tin compounds**, volatile, and their toxicity (VAUBEL), B., 195.
- Tin arsenides**, electrical conductivity of (PADOA), A., 226.
- monochloride, band spectrum of (JEVONS), A., 222.
- halides, compounds of, with organic bases (SCAGLIARINI and BRASI), A., 310.
- hydrides (WEEKS), A., 369; (STRECKER and DANIEL; DRUCE and WEEKS), A., 1113.
- iodates, complex (P. and S. N. RAY), A., 1015.
- silicofluoride, manufacture of (SOC. DE RECHERCHES ET DE PERFECTIONNEMENTS IND. and SOC. D'ELECTRO-MÉTALLURGIE DE DIVES), (P.), B., 876.
- sulphide (*mosaic gold*), preparation of (HADERT), B., 201.
- Stannous bromoiodide**, chlorobromide, and chloroiodide (KARANTASSIS), A., 255.
- chloride, production of (LITTLE and METAL & THERMIT CORP.), (P.), B., 915.
- action of nitrous acid on (RASCIO), A., 1016.
- action of sodium hypophosphite on (TERNI and PADOVANI), A., 255.
- phosphates (JABŁCZYŃSKI and WIECKOVSKI), A., 588.
- sulphate, basic (CARSON), A., 587.
- compound of hydrogen chloride and (EPHRAIM), A., 587.
- Stannic bromide**, miscibility of sulphur dioxide and (BOND and BEACH), A., 344.
- hydroxide gels, formation of (GHOSH, CHAKRAVARTI, and DHAR), A., 676.
- oxide, equilibrium of water and (GUTBIER, HÜTTIG, and DÖBLING), A., 798.
- Stannic acid**, compounds of, with pyrocatechol and pyrogallol (WEINLAND and MAIER), A., 398.
- Stannic acids**, X-ray spectra of (POSNJAK), A., 1085.
- Stanni-iodic acid**, and its salts (P. and S. N. RAY), A., 1015.
- Dihydroxytetraiodatostannic acid** (P. and S. N. RAY), A., 1015.
- Tetrahydroxydi-iodatostannic acid** (P. and S. N. RAY), A., 1015.
- Tin organic compounds** (CHAMBERS and SCHERER), A., 629; (OECHSLIN and ÉTABL. POULENC FRÈRES), (P.), B., 465.
- Tin alkyl compounds** (KRAUS and BULLARD), A., 1028.
- di- and tri-phenyls, and their derivatives (CHAMBERS and SCHERER), A., 629.
- halides, compounds of hexamethylenetetramine with (SCAGLIARINI and MONTI), A., 1113.
- Stannous aniline** and pyridine iodides (KARANTASSIS), A., 276.
- Tin detection**, determination, and separation:—
- detection of, in minerals, with the blow-pipe (BRALY), A., 705.
- detection and determination of, in toxicology (DEUSSEN), A., 872.
- determination of, in cassiterite (PIRLOT), B., 921.
- determination of, in non-ferrous alloys (MARR), B., 588.
- determination of, in preserves and their containers (OWE), B., 606.
- separation of antimony and, in presence of lead (LIDLE), B., 327.

Tin detection, determination, and separation:—
separation of arsenic and (LAHEY and VULCAN DETINNING Co.), (P.), B., 360.
separation of zinc and (LASSIEUR), A., 1013.

Tin anodes. See under Anodes.

Tin ores, electrolysis of (SAXON), B., 17.
smelting of (GOLDSCHMIDT and SCHERTEL), (P.), B., 64.
containing lead, production of lead-free tin from (METALLO-CHEM. WERKE RODLEBEN), (P.), B., 756.

Tin-plate for containers for food products (SERGER), B., 418.

Tins, "blown" (SHAW and FREDERICK), B., 689.

Tinctures, determination of alcohol content of (GADAMER and NEUHOFF), B., 214.
pharmaceutical, determination of residue in (FIGDOR), B., 383.

***Tineola crinella*, excreta of (HOLLANDE and CORDEBARD), A., 1053.**

Tintometer (BRITISH LAUNDERERS' RESEARCH ASSOC. and PARKER), (P.), B., 968.

Tissues, ammonia formation in (GYÖRGY and RÖTHLER), A., 864.
oxidation in (HANDOVSKY), A., 1170.
respiration in (WARBURG), A., 190.
determination of gold in (LOMHOLT), A., 328.
determination of nitrates in (KOHN-ABREST and KAWAKIBI), A., 1283.
determination of sulphates in (DENIS and LECHE), A., 212.
See also Animal and Plant tissues.

Titanium, high-current arc spectrum of (KING), A., 1070.
spark spectrum of (LANG), A., 874.
recovery of, from ores (GREGORY), (P.), B., 590.
from acid solutions containing iron and titanium sulphates (RADIUM & RARE EARTH TREATMENT Co. and COOK), (P.), B., 744.
from ores (GREGORY), (P.), B., 885.
ions, trivalent, colour of (PICCARD), A., 1080.
pigments. See under Pigments.

Titanium alloys, manufacture of (STIMSON and BORCHERS), (P.), B., 367.
with aluminium (MANCHOT and LEBER), A., 119.

Titanium compounds, trivalent, oxidation of, by iodine (YOST and ZABARO), A., 691.

Titanium salts, effect of, on nutrition (RICHEL, GARDNER, and GOODBODY), A., 197.

Titanium ammonium fluoride, thermal decomposition of (HARTMANN), A., 1007.
halides, hydrolysis of (ATHANASIU), A., 580.
oxide, manufacture of (MACKAY), (P.), B., 876.
spectrum of mixed molybdenum and vanadium oxides and (EPPLEY), A., 446.

dioxide (*titania*), luminescence of (WÖHLER), A., 335.
catalytic activation of (RUDSILL and ENGELDER), A., 250.
influence of, on pure clays (KUECHLER), B., 361.

Titanic acid, preparation of easily filtered hydrated (DEUTSCHE GASGLÜHLICHT-AUER-GEZ.), (P.), B., 12.
neutralisation of sulphuric acid in precipitated (FABR. PROD. CHIM. THANN ET MULHOUSE), (P.), B., 156.

Titanous chloride, standardisation of, potentiometrically (ZINTL), A., 592.
determination of, electrometrically (KOLTHOFF, TOMÍČEK, and ROBINSON), A., 376.
sulphate, manufacture of (McCoy and LINDSAY LIGHT Co.), (P.), B., 12.
as a reducing agent in analysis (RUSSELL), A., 592.

Titanium organic compounds:—
Titanium halides, compounds of hexamethylenetetramine with (SCAGLIARINI and MONTI), A., 1113.
compounds of, with organic bases (SCAGLIARINI and BRASI), A., 310.

Titanium detection and separation:—
detection of (TANANAEV and PANTSCHENKO), A., 930; (PAVELKA), A., 1222.
detection of, by spot analysis (TANANAEV and PANTSCHENKO), A., 377.
separation of zirconium from (SCHRÖDER), A., 705; (MOSER), A., 1019.

Titanium white (HOEK), B., 679.

Titanobiotite. See Wodanite.

Toad, liver and spleen pigments of the (OKAMOTO), A., 857.

Tobacco, constituents of (SCHMUCK), A., 547.
carbohydrates in (BALABOCCA), A., 646.

Tobacco, removal of nicotine from (SCHLOESING), (P.), B., 465, 512; (SMITH), (P.), B., 465.

Kentucky, chemical constituents of grades of (SHEDD), B., 896.
detection and determination of glycerol in (CHAPMAN), B., 801.
determination of nicotine in (RUNDSHAGEN), B., 214; (YOUNG), B., 644.

Tobacco plants, insecticides for (HOWARD and GRASSELLI CHEMICAL Co.), (P.), B., 559.

***Todarus sagittatus* (calamary) oil from (ANDRÉ and CANAL), B., 758.**

Tolane, diamino- and dinitro-derivatives, asymmetrically substituted (HARRISON), A., 827.
3:4'-diamino-, and its diacetyl derivative and 3:4'-dinitro- (HARRISON), A., 827.

Tolane series, *as*-diamino- and -dinitro-derivatives (HARRISON and WOOD), A., 604.

***o*-Tolidine mercurihalides (HERZOG), A., 1050.**

***p*-Tolualdehyde, 2:6-dihydroxy- (PFAU), A., 837.**

Toluene, conductivity of (KUSNETZOV), A., 359.
physical properties of the system, benzene (MITSUKURI and NAKATSUCHI), A., 356.
equilibrium of acetic acid, water, and (WOODMAN), A., 1101.
equilibrium of silver perchlorate, water, and (HILL and MILLER), A., 26.
distillation of mixtures of benzene, water, and (BAREAUDY), A., 578.
distillation of mixtures of chloroform and (LESLIE and GENIESSE), B., 615.
fusion curves of mixtures of *m*-xylene and (NAKATSUCHI), A., 682.
chlorination of (BERGEL), A., 359.
photo-chlorination of (BOOK and EGGERT), A., 827.
and its nitro-derivatives, oxidation of (SEYDEL and SEYDEL CHEM. Co.), (P.), B., 463.
preparation of polychloro-derivatives of (SILBERRAD), A., 158.

Toluene, 2:3:4-triamino-, and 2:3:4-trinitro-, and their derivatives (GORNALL and ROBINSON), A., 1028.
p-bromo- and *o*-nitro-, electrolytic oxidation of (CONN and LOWRY), A., 1111.
2-chloro-4-nitro-, chlorination of (DAVIES and LEEPER), A., 827.
4-chloro-2:3-dinitro- (KENNER, TOD, and WITHAM), A., 58.
3:5-dichloro-2:4-dinitro-, and 2:4-dinitro-3:5-diamino- (BORSCHKE and TRAUTNER), A., 390.
p-iodo-, freezing point curves of mixtures of tri-*p*-tolylarsine and (PEAT), A., 418.
4:5:6-triiodo-2-nitro- (KALB, SCHWEIZER, ZELLNER, and BERTHOLD), A., 1152.

***o*-nitro-, α - and β -forms of (CLARK and CROZIER), A., 159.**
mercuration of (COFFEY), A., 629; (BURTON, HAMMOND, and KENNER), A., 966.

***m*-nitro-, physical constants of, and of its mixtures with hydrocarbons (DESSART), A., 464.**

***trinitro*-, determination of molecular weight in (PASTAK), A., 349.**
influence of sunlight on (LODATI), B., 220.
molecular compound of anthracene and (SKRAUP and EISEMANN), A., 999.
removal of tetranitromethane from (GÄRTNER), (P.), B., 110.

2:3:4:6-tetranitro-, 5-nitro-2:3-diamino-, acetyl derivative, 3:5-dinitro-2-amino-, acetyl and benzoyl derivatives, and 3:5-dinitro-2-nitroso- (BORSCHKE and FESKE), A., 605.

***o*- and *p*-Toluenes, separation of (WAHL and SOC. ANON. MATIÈRES COLORANTES ET PROD. CHIM. DE ST. DENIS), (P.), B., 817*.**

Toluenes, nitro-, vapour pressures of (BERLINER and MAY), A., 1198.
dinitro-, crystal forms of (JAEGER), A., 720.

***p*-Toluenesulphinic acid, and its derivatives, and their rotation (PHILLIPS), A., 159.**

Toluene-4- and -3-sulphinic acids, *o*-nitro- (COFFEY), A., 629.

***p*-Toluenesulphochloroamide, sodium derivative. See "Aktivin."**

***p*-Toluenesulphonamides, substituted, hydrolysis of (HOLMES and INGOLD), A., 829.**

4-*p*-Toluenesulphonamidodiphenyl, 3-nitro-derivative (BELL and KENYON), A., 1241.

***p*-Toluenesulphonazide, action of, with malonic esters (CURTIUS and KLAVERHN), A., 415.**

Toluene-*m*-sulphonic acid, 2:4-diamino-, sodium salt and derivatives (GORNALL and ROBINSON), A., 1028.

Toluene-*p*-sulphonic acid, beryllium salt (SIDGWICK and LEWIS), A., 788.

Toluene compounds, Me = 1.

- Toluene-*p*-sulphonic acid, glyceryl ester (FAIRBOURNE and FOSTER), A., 145.
- Toluene-*p*-sulphonic acid, 3-nitro-, salts of (HEWITT, KING, and MURCH), A., 851.
- Toluene-*o*-sulphonic acid, aniline salt (GILMAN and MORRIS), A., 1132.
- Toluene-3-sulphon-*o*-nitrotolylhydrazide, 2-nitro- (COFFEY), A., 629.
- γ -Toluene-*p*-sulphonylacetone, α -bromo-, α -chloro-, and α -iodo- (TRÖGER and PAHLE), A., 523.
- Toluenesulphonyl-*dl*-alanine, derivatives of (SCHÖNHEIMER), A., 716.
- Toluenesulphonyl-*dl*-alanylglycine (SCHÖNHEIMER), A., 716.
- Toluenesulphonyl-*d*-alanyl-*l*-leucine (SCHÖNHEIMER), A., 716.
- Toluene-*p*-sulphonyl- β -*p*-anisidinopropionic acid (CLEMO and PERKIN), A., 76.
- α -Toluene-*p*-sulphonyl- γ -*o*-anisolesulphonylacetone, and its phenylhydrazone (TRÖGER and PAHLE), A., 524.
- Toluene-*p*-sulphonylbenzylaminoacetic acid, and its ethyl ester (CLEMO and PERKIN), A., 76.
- Toluene-*p*-sulphonyl- α -fructose diisopropylidene ether (FREUDENBERG, BURKHART, and BRAUN), A., 601.
- Toluenesulphonylglycine, derivatives of (SCHÖNHEIMER), A., 716.
- Toluenesulphonylglycyl-*dl*-alanine (SCHÖNHEIMER), A., 716.
- Toluenesulphonylglycylglycine (SCHÖNHEIMER), A., 716.
- Toluenesulphonylglycyl-*dl*-leucine (SCHÖNHEIMER), A., 716.
- Toluenesulphonylglycyl-*dl*-phenylalanine (SCHÖNHEIMER), A., 716.
- Toluenesulphonyl-*dl*-leucine, derivatives of (SCHÖNHEIMER), A., 716.
- Toluenesulphonyl-*dl*-leucylglycine (SCHÖNHEIMER), A., 716.
- α -Toluene-*p*-sulphonyl- β -nitro-3-hydroxyphenylacrylonitriles (TRÖGER and FROMM), A., 69.
- α -Toluene-*p*-sulphonyl- β -(4-nitro-3-methoxyphenyl)acrylonitrile (TRÖGER and FROMM), A., 69.
- Toluene-*p*-sulphonyl- β -*p*-phenetidinopropionic acid (CLEMO and PERKIN), A., 76.
- α -Toluene-*p*-sulphonyl- γ -*o*-phenetolesulphonylacetone phenylhydrazone (TRÖGER and PAHLE), A., 524.
- 3-Toluene-*p*-sulphonyl-2-*n*-propylquinoline (TRÖGER and UNOAR), A., 524.
- 3-Toluene-*p*-sulphonylquinoline, 2-amino-, methiodide and ethiodide (TRÖGER and UNGAR), A., 524.
- Toluenesulphonylsarcosyl-*d*-alanine (SCHÖNHEIMER), A., 716.
- Toluenesulphonyl- β -toluidinopropionic acids (CLEMO and PERKIN), A., 76.
- γ -Toluene-*p*-sulphonyl- β - ϵ -triacylglycerose (FREUDENBERG, BURKHART, and BRAUN), A., 601.
- 3- and 6-Toluenesulphonyltriacyl-methylglucosides (OHLE and SPENCKER), A., 1126.
- 1-Toluene-*p*-sulphonyl-1:2:3-triazole-4-carboxylic acid, 5-hydroxy-, salts and esters of (CURTIUS and KLAHEHN), A., 415.
- m*-Toluic acid, ω -chloro-, ethyl ester (MORGAN and PORTER), A., 836.
- 6-thiol- (KROLLPFEIFFER, SCHULTZE, and SOMMERMEYER), A., 166.
- Toluic acids, thallous salts (WALTER), A., 712.
- Toluic acids, *m*-amino-*p*-hydroxy-, *m*-nitro-*p*-chloro-, and *m*-nitro-*p*-hydroxy-, ethyl esters and derivatives of (CASE), A., 166.
- o*-Toluidine, preparation and properties of (TANNER and LASSELLE), A., 1030.
- equilibrium of acetic acid, water, and (ANGELESCU), A., 357.
- dimercuracetate, and its derivatives (VECCHIOTTI), A., 747.
- o*-Toluidine, 3-bromo-, acetyl derivative (BURTON, HAMMOND, and KENNER), A., 966.
- dichloro- (VECCHIOTTI), A., 747.
- 3:5-dinitro- (BORSCHKE and FESKE), A., 605.
- m*-Toluidine, physical constants of, and of its mixtures with hydrocarbons (DESSART), A., 464.
- m*-Toluidine, 2:6-di-bromo- (OLIVIER), A., 161.
- 2:6-dichloro-4-nitro- (DAVIES and LEFER), A., 827.
- p*-Toluidine, 3:5-di-bromo-2-nitro- (BORSCHKE and TRAUTNER), A., 391.
- o*- and *p*-Toluidine isoamyl and butyl sulphates and phenyl and tolyl sulphamates (POPELIER), A., 1123.
- Toluidines, acetylation of (COOK), A., 1131.
- Toluidines, chloronitro-, and their acetyl derivatives (KENNER, TOD, and WITHAM), A., 58.
- 4-iodo-2-nitro-, 4:6-diiodo-2-nitro-, and 4:5:6-triiodo-, and their derivatives (KALB, SCHWEIZER, ZELLNER, and BERTHOLD), A., 1152.

Toluene compounds, Me = 1.

- 1-*p*-Toluidino-1-cyanocyclopentane, and its nitroso-derivative (OAKESHOTT and PLANT), A., 843.
- 1-*m*-Toluidino-4-methylbenzthiazole hexabromide (HUNTER), A., 744.
- 2-Toluidino-1:6:8-trinitronaphthalenes (VAN DER KAM), A., 1240.
- 1-*p*-Toluidinocyclopentane-1-carboxylic acid, and its derivatives (OAKESHOTT and PLANT), A., 843.
- o*-Toluenitrile, 6-bromo- (BURTON, HAMMOND, and KENNER), A., 966.
- p*-Toluoxyzotriphenylmethane (WIELAND, VOM HOVE, and BÖRNER), A., 62.
- p*-Toluoxyzotri-*p*-tolylmethane (WIELAND, VOM HOVE, and BÖRNER), A., 62.
- m*-Toluoxyzylformic acid, 2-amino- (POSNER, STOCKENSCHNEIDER, NEUMANN, NACHRING, MEYER, and BRISSENER), A., 1155.
- p*-Toluoxyzyltriphenylmethylhydrazine (WIELAND, VOM HOVE, and BÖRNER), A., 62.
- p*-Toluoxyzyltri-*p*-tolylmethylhydrazine (WIELAND, VOM HOVE, and BÖRNER), A., 62.
- Toluquinone, 4-halogeno-, oximes (HODGSON and MOORE), A., 1034.
- Toluthiazoles, ψ -amino-, hydrochlorides (HUNTER), A., 850.
- Tolyl sulphides and sulfoxides, 2-amino-, and their acetyl derivatives (CHILD and SMILES), A., 1244.
- m*-Tolyl ethyl ether, 5-bromo-2:4-dinitro- (BORSCHKE and TRAUTNER), A., 391.
- methyl ether, 2:5-dichloro- and 6-chloro-2-nitro- (GIBSON), A., 832.
- 4-chloro-6-nitro- (KENNER, TOD, and WITHAM), A., 58.
- dinitro-4-hydroxy-, acetyl derivatives (OBERLIN), A., 283.
- thallous oxide (CHRISTIE and MENZIES), A., 56.
- p*-Tolyl acetylacetonyl sulphide (BROOKER and SMILES), A., 947.
- methyl ether, *m*-amino-, manufacture of (DERICK, LEAMING, RALPH, and NAT. ANILINE & CHEMICAL CO.), (P.), B., 185.
- selenocyanate (CHALLENGER, PETERS, and HALÉVY), A., 966.
- 2-*N*-Tolyl-2:3-acenaphthatriazoles (CHARRIER and BERETTA), A., 307.
- β -*p*-Tolylacetylene, α -bromo-, and α -iodo- (GRIGNARD and PERRICHON), A., 380.
- 2-Tolylazoacenaphthenes, and 3-amino- (CHARRIER and BERETTA), A., 307.
- 4-*p*-Tolylbenzhydrol (GOMBERG and PERNERT), A., 944.
- n*-*p*-Tolylbenzimidino-*p*-tolyl thioether (CHAPMAN), A., 1138.
- 4-*p*-Tolylbenzophenone (GOMBERG and PERNERT), A., 944.
- p*-Tolylbenzylmethylamine *N*-oxides, salts of (MEISENHEIMER, GLAWE, GREESKE, SCHORNING, and VIEWEG), A., 1240.
- p*-Tolylchlorodiacetylglucose (PONZIO and PEROLIO), A., 308.
- 2-*p*-Tolyldecahydronaphthalene (GYXIN), A., 389.
- 4-*p*-Tolylidiphenyl- α -naphthylcarbinol, and its derivatives (GOMBERG and PERNERT), A., 944.
- m*-Tolylenediamine, platinum compounds of (ROSENHEIM and HÄNDLER), A., 958.
- Tolylenesulphonylidedisulphonyl chlorides (POLLAK, GEBAUER-FÜLNEGG, and RIESZ), A., 514.
- β -*m*- and *p*-Tolylethylamines, and their derivatives (TITLEY), A., 512.
- p*-Tolylethylene, triiodo- (GRIGNARD and PERRICHON), A., 382.
- β -*m*- and *p*-Tolylethylmethylamines, and their salts (TITLEY), A., 512.
- β -*o*-Tolylglucoside, tetra-acetyl derivative (KUNZ), A., 275.
- p*-Tolylglyoxylanilide, and its oxime (BORSCHKE and FRITZSCHE), A., 393.
- Tolylhydroxyglyoximes. See Methylbenzoylformhydroxamic acids.
- Tolylhydroxylamines, di- and tri-nitro-, and their derivatives (BORSCHKE and FESKE), A., 605.
- m*-Tolyl- β -4-hydroxy-3-methylcyclohexylpropane, β -6-hydroxy- (CHEM. FABR. VORM. SCHERING), (P.), B., 720.
- p*-Tolyl β -hydroxyvinyl ketone, and its derivatives (BENARY, MEYER, and CHARISIUS), A., 273.
- 3-Tolylimino-5-phenyl-4:1:2-thiodiazoline, and its 2-benzoyl derivative (FROMM), A., 717.
- p*-Tolylindazoles, and hydroxy-, and their derivatives (v. AUWERS and STRÖDTER), A., 528.
- 2-*p*-Tolyl-6-methylbenzthiazole-1-oxide (CHARRIER, CRIPPA, and DANSI), A., 849.
- p*-Tolylmethylthylarsine (MILLS and RAPER), A., 186.
- p*-Tolylmethylthiodarsine (MILLS and RAPER), A., 186.

- Toluene compounds, Me = 1.*
- m*-Tolyl-3- and -5-methylisoxadiazines, hydroxy-, and their derivatives (WITTIG and BANGERT), A., 177.
- m*-Tolyl-3-methylisoxazole, 5:2'-hydroxy- (WITTIG and BANGERT), A., 177.
- p*-Tolyl *p*-methylstyryl ketone, and its dipicrate (WEYGAND and MATTHES), A., 1041.
- m*-Tolyl- α -naphthylamine, 2:4-dinitro- (GORNALL and ROBINSON), A., 1029.
- 4-*p*-Tolyl-1:2:5-oxadiazole, 3-hydroxy-, and its copper salt (BAIARDO), A., 1262.
- m*-Tolylpiperidine, 2:4-dinitro- (GORNALL and ROBINSON), A., 1029.
- p*-Tolylpropinenitrile, and its amide (GRIGNARD and PERRICHON), A., 382.
- 4-*p*-Tolylsemicarbazide di- and tetra-benzoates (FROMM), A., 717.
- p*-Tolyl styryl ketone dibromide (WEYGAND and MATTHES), A., 1248.
- α -, β -, and γ -*p*-Tolyl styryl ketones (WEYGAND and MATTHES), A., 1041.
- 5-*p*-Tolylthiol-6-hydroxyquinoline (BROOKER and SMILES), A., 948.
- 1-*p*-Tolylthiol-2-naphthol (BROOKER and SMILES), A., 948.
- α -*p*-Tolylthiopropionic acid (BROOKER and SMILES), A., 947.
- 4-*p*-Tolylthiosemicarbazide, and its semicarbazones (FROMM), A., 717.
- m*-Tolyl- β -thiosemicarbazides, dinitro- (GIUA and PETRONIO), A., 62.
- p*-Tolyl β -*p*-toluidino- β -phenylethyl ketone (WEYGAND and MATTHES), A., 1248.
- 4-*p*-Tolyltriphenylcarbinol, and its derivatives (GOMBERG and PERNERT), A., 944.
- 4-*p*-Tolyltriphenylmethane (GOMBERG and PERNERT), A., 944.
- 4-*p*-Tolyltriphenylmethyl, and its peroxide (GOMBERG and PERNERT), A., 944.
- Tomatoes, ripening of (ROSA), A., 1065.
- organic acids in (BORNTÄGER), B., 105.
- effect of fermentation on vitamin-C content of juice of (LEPKOVSKY, HART, HASTINGS, and FRAZIER), B., 105.
- Tools, hard alloys for (SIEMENS & HALSKE and FETKENHEUER), (P.), B., 549.
- Topaz, spectroscopic analysis of (WILD and KLEMM), A., 708.
- "Tora-fugu" liver oil (TSUJIMOTO), B., 636.
- Torula*, inoculation of raw sugars with (OWEN), B., 559.
- Town refuse. See under Refuse.
- Towers, cooling (SORGE), (P.), B., 346*.
- Toxin, union of, with antitoxins *in vitro* (FUCHS and v. FALKENHAUSEN), A., 1166.
- Trade wastes, chemistry of (BUSWELL, GREENFIELD, and SHIVE), B., 998.
- organic, disposal of (BARTOW), B., 998.
- Transformers, deoxygenation of atmosphere in (RODMAN and WESTINGHOUSE ELECTRIC and MANUF. Co.), (P.), B., 65.
- oil-insulated, purification of air drawn into (METROPOLITAN-VICKERS ELECTRICAL Co. and HILL), (P.), B., 446.
- Transformer oils, refining of (BUTKOV), B., 1002.
- used, purification of, with fuller's earth (v. DER HEYDEN and TYPEKE), B., 198.
- testing of (BAUM), B., 475.
- conservation of (ALLOEM. ELEKTRIZITÄTS-Ges.), (P.), B., 550.
- protection of, against oxidation (BRIT. THOMSON-HOUSTON Co. and COMP. FRANCO. POUR L'EXPLOIT. PROC. THOMSON-HOUSTON), (P.), B., 550.
- Transition points, determination of, in non-aqueous solutions (MASON and MATHEWS), A., 127.
- micro-determination of (VORLÄNDER and HABERLAND), A., 142.
- Transmutation of elements (SMITS), A., 106; (DAVIES and HORTON), A., 221; (GARRETT), A., 773.
- Transparency curves, apparatus for registration of (MÜLLER), A., 109.
- Transport numbers, determination of (MACINNES, COWPERTHWAIT, and BLANCHARD), A., 1008.
- Trees, chemistry of bark of (ZELLNER), A., 646, 983, 1281.
- evergreen, catalase content of (BURGE), A., 541.
- Trehalose in *Myzomycetæ* (IVANOV), A., 97.
- Triacetaldehyde, mono- and di-thio, and their sulphone oxidation products (LEBEDEV and PLATONOV), A., 599.
- Triacetin, preparation of, and its action on phenol (KAWAI), A., 281.
- manufacture of (SONN), (P.), B., 852.
- effect of quinino and carbamide compounds on hydrolysis of, by lipase (SMORODINCEV and DANILOV), A., 202, 640.
- Triacetolactone-5-carboxylic acid, and its ethyl ester and salts (MALACHOWSKI), A., 1024.
- Triacetoneamine, nitroso-, decomposition of, in presence of hydroxyl (COLVIN), A., 1109.
- catalytic decomposition of, in sodium hydroxide and in buffer solutions (KILPATRICK), A., 919.
- 3:4:5-Triacetoxy-*o*-methoxyacetophenone (GATEWOOD and ROBINSON), A., 1043.
- Triacetylanhydro-*dl*-arginine (BERGMANN and KÖSTER), A., 1235.
- Triacetylglucose isopropylidene ether (OHLE and SPENCKER), A., 1126.
- Triacetylmethylglucoside, and its derivatives (OLDHAM), A., 152.
- Triacetyl- β -methylglucoside- ζ -pyridinium *p*-toluenesulphonate (OHLE and SPENCKER), A., 1126.
- Triacetylpentose nitrate (OLDHAM), A., 152.
- Tri-*o*-anisylbismuthine (SUPNIEWSKI and ADAMS), A., 419.
- Triarylmethanes, amino-, manufacture of (BRIT. DYESTUFFS CORP. and SAUNDERS), (P.), B., 866.
- Triarylmethoxyphosphines, dichloro-. See Triarylmethoxyphosphorus dichlorides.
- Triarylmethoxyphosphorus dichlorides, formation of phosphinic acids from (BOYD and SMITH), A., 1161.
- 1:2:4-Triazole, 3:4-diamino-5-thiol-, derivatives of (FROMM), A., 717.
- Triazoles, formation of, from *o*-aminoazo-compounds (CRIPPA; CHARRIER and BERETTA), A., 307.
- 1:2:4-Triazoles, synthesis of (GASTALDI and PRINCIVALLE), A., 1260.
- Triazolealdehydes (ROJAIN and TRIELOV), A., 78.
- 1:2:3-Triazole-4-carboxylamide, 1-amino-5-hydroxy- and 5-hydroxy-, benzenesulphonyl derivatives, and their salts (CURTIUS and JEREMIAS), A., 416.
- toluenesulphonyl derivatives (CURTIUS and KLAHEHN), A., 415.
- 1:2:3-Triazole-4-carboxylic acid, 5-hydroxy-, 1-benzylsulphonyl derivative (CURTIUS and JEREMIAS), A., 415.
- Triazole-*o*-dicarboxylic acids (BERETTA), A., 182.
- Triazole-eosin (BERETTA), A., 182.
- Triazolefluorescein (BERETTA), A., 182.
- 1:2:4-Triazolyl-5-benzylidenediazohydrazone, disulphide of, and 3-thiol-, lead salt and benzyl derivative (FROMM), A., 717.
- 1:2:4-Triazolyl-4-phenylthiosemicarbazide, 3-thiol- (FROMM), A., 717.
- Tribenzylamine, infra-red absorption spectrum of (BELL), A., 453.
- Tribenzylamine, *mm'm'*-trinitro- (GOSS, INGOLD, and WILSON), A., 1133.
- Triboluminescence, and its photographic spectra (NELSON; PERSCHKE), A., 455.
- and crystal luminescence (LONGCHAMON), A., 660.
- Tri-*n*-butyl-*n*-heptylammonium salts (HAGER and MARVEL), A., 1232.
- Tricamphoylbenzene (RUPE and PERRET), A., 406.
- Tricarboethoxygallaldehyde, and its *p*-nitrophenylhydrazone (ROSENMUND and BOEHM), A., 1136.
- 3:4:5-Tricarboethoxytrihydroxybenzyl alcohol, and its α -naphthylurethane (ROSENMUND and BOEHM), A., 1136.
- 1:3:4-Tricarboethoxy-2-ketocyclopentylmethylsuccinic acids, ethyl esters (INGOLD and SHOFFEE), A., 1039.
- Tri-(3-carboethoxy-2-methylpyrryl) methane (FISCHER and SCHUBERT), A., 737.
- Tricarboethoxygallaldehyde, and its *p*-nitrophenylhydrazone (ROSENMUND and BOEHM), A., 1136.
- 3:4:5-Tricarboethoxytrihydroxybenzyl alcohol, and its derivatives (ROSENMUND and BOEHM), A., 1136.
- Tri-*p*-carboethoxytriphenylbismuthine, trinitro-, salts of (SUPNIEWSKI and ADAMS), A., 420.
- Tri-(carboxyphenyl)bismuthines, and their derivatives (SUPNIEWSKI), A., 966.
- Tricarboxytriphenylbismuth dichlorides, preparation of (SUPNIEWSKI and ADAMS), A., 419.
- Tricarboxytriphenylbismuthine dichlorides, and their trimethyl ester (SUPNIEWSKI and ADAMS), A., 419.
- Tricitin, properties of (COLIN and DE CUGNAC), A., 1066.
- Tricupanononin (TSUJIMOTO and KIMURA), A., 1226.

- Tricosan- μ -ol (GRÜN, ULBRICH, and KREZIL), A., 596.
 Δ^8 -Tricosene (GRÜN, ULBRICH, and KREZIL), A., 596.
 μ -Tricosyl esters (GRÜN, ULBRICH, and KREZIL), A., 597.
 Tridecane, *av*-dibromo- (CHUIT), A., 499.
 Tridecane-*av*-dicarboxylic acid, and its esters (CHUIT), A., 499.
 Tridecane-*av*-diol (CHUIT), A., 499.
*cyclo*Tridecanone, and its semicarbazone (RUZICKA, STOLL, and SCHINZ), A., 615.
 Tridecoic acid (NOLLER and ADAMS), A., 713.
 Tridecoic acid, θ -hydroxy-, methyl ester (NOLLER and ADAMS), A., 712.
 μ -hydroxy-, and its methyl ester and its phenylurethane (NOLLER and ADAMS), A., 597.
n-Tridecoylacetone, and its copper salt (MORGAN and HOLMES), A., 148.
 Tri- $\gamma\gamma$ -dimethyl- Δ^8 -butinenyl chloride (GRAY and MARVEL), A., 43.
 Tri- $\gamma\gamma$ -dimethyl- Δ^8 -butinenylmethyl (GRAY and MARVEL), A., 43.
 Triethylamine, triamino-, cobaltic salts with (JAEGER and KOETS), A., 697.
 $\beta\beta'\beta''$ -triamino-, and its complex metallic salts (MANN and POPE), A., 53, 387.
 trihydroxy-, acetyl derivative, salts of (JONES and BURNS), A., 155.
 Triethylamine oxide, trihydroxy-, and its derivatives (JONES and BURNS), A., 155.
 Triethyl-*n*-butylammonium iodide (HAGER and MARVEL), A., 1232.
 Triethylene trisulphide, identity of 1:4-dithian and (RAY and BOSE-RAY), A., 1023.
 Triethylphloroglucinol (KLARMANN), A., 1135.
 Triethylphosphine, and its peroxide, action of, on thioketones (SCHÖNBERG and KRÜLL), A., 935.
 additive compound of carbon disulphide and, crystallography of (JAEGER), A., 890.
 $\alpha\beta\beta$ -Triethylpropionic acid, $\alpha\beta$ -dicyano-, ethyl ester (HARTMAN), A., 800.
 $\alpha\beta\beta$ -Triethylsuccinic acid (HARTMAN), A., 800.
 Trigluconan (IRVINE and OLDHAM), A., 153.
 Triglycylarsanilic acid, and its chloroacetyl derivative (GIEMSA and TROPP), A., 1162.
 Trihexosan (CASTAN and PICTET), A., 52.
 Tricyclohexylarsine, and its derivatives (ROBERTS, TURNER, and BURY), A., 852.
 Tricyclohexylmethane (IPATIEV and DOLGOV), A., 949.
 2:4:6-Trihydrazinobenzene, 1:3-dinitro- (BORSCH and TRAUTNER), A., 390.
 Trihydroxytri-iodoantimonic acid. See under Antimony.
 Tri- γ -keto-*n*-butylamine, trioxime of, and its hydrochloride (MANNICH and RITSERT), A., 504.
 Triketohydrindene hydrate, condensation of indole with (TOMITA and FUKAGAWA), A., 1257.
 Trimalonatotrihydroxyferric perchlorate (WEINLAND and LOEBICH), A., 499.
 Trimethyl phosphate and phosphite (MILOBEDZKI and KOLITOWSKA), A., 730.
 Trimethoxybenzene, *s*-trinitro-, action of hydroxylamine on (VAN RIJN), A., 510.
 4:5:6-Trimethoxybenzene-1:3-dicarboxylic acid, and its methyl ester (FEIST and AWE), A., 404.
 3:4:3'-Trimethoxybenzophenone, and its oxime (LEA and ROBINSON), A., 1144.
 3:4:5-Trimethoxybenzoylacetophenone, and its copper derivative (BRADLEY and ROBINSON), A., 1145.
 3:4:5-Trimethoxybenzoylhydrazine (KALB and GROSS), A., 614.
 3:4:5-Trimethoxybenzylidene-3':4':5'-trimethoxybenzoylhydrazine (KALB and GROSS), A., 614.
 2:4:5-Trimethoxydiphenyl- α -tolylmethane (SZÉKI), A., 285.
 Trimethoxyflavylium ferriehlorides (ROBERTSON and ROBINSON), A., 1043.
 Trimethoxyglutaric acid, 1-dimethyl ester and amide (McOWAN), A., 941.
 3:5:6-Trimethoxy-4-keto-1-vinyltetrahydrophenanthrene (GOTO), A., 1161.
 5:7:4'-Trimethoxy-2-methylisoflavone (BAKER and ROBINSON), A., 1253.
 3:3':4'-Trimethoxy-5-methylflavylium ferriehloride, 7-hydroxy- (ROBERTSON and ROBINSON), A., 1043.
 Trimethoxyphenylbismuthines (SUPNIEWSKI), A., 966.
 2:4:6-Trimethoxyphenyl 3:4-dimethoxybenzyl ketone (FREUDENBERG, CARRARA, and COHN), A., 74.
 3:4:5-Trimethoxyphenyl 2-hydroxy-4:6-dimethoxystyryl ketone (GATEWOOD and ROBINSON), A., 1013.
 3:4:5-Trimethoxypropionophenone, and its *p*-nitrophenylhydrazone (MAUTHNER), A., 516.
 Trimethylacetophenones, hydroxy-, and their derivatives (v. AUWERS, BUNDESMANN, and WIENERS), A., 609.
 Trimethyl- β -(β -acetoxyethoxy)ethylammonium bromide and iodide (CALSEN and WINTHROP CHEMICAL CO.), (P.), B., 608.
 $\alpha\beta\beta$ -Trimethylacrylic acid, anilide of (KON and SPEIGHT), A., 1246.
 Trimethylamine oxide, structure and ionisation of (NOYES), A., 154.
 Trimethylamylammonium bromides (v. BRAUN and MURJAHN), A., 829.
 Trimethyl- γ -arabonolactone, structure of (HAWORTH and NICHOLSON), A., 1025.
 2':4':6'-Trimethylbenzophenone, 3:5-dibromo-, and 4-nitro-, crystal structure of (JAEGER), A., 890.
 Tri-*p*-methyl- β -benzopinacoliu (WIELAND, VOM HOVE, and BÖRNER), A., 62.
 Trimethylbenzylstannane (KRAUS and BULLARD), A., 1028.
 Trimethyl- β -bromoallylammonium bromide (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
 Trimethylbutylammonium bromides (v. BRAUN and MURJAHN), A., 829.
 1:2:6-Trimethyl-4-*isobutyl*-1:4-dihydropyridine-3:5-dicarboxylic acid, ethyl ester (MUMM and LUDWIG), A., 961.
 1:2:6-Trimethyl-4-*isobutyl*tetrahydropyridine-3:5-dicarboxylic acid, ethyl ester, and its styphnate (MUMM and LUDWIG), A., 961.
 Trimethyl- α -carbethoxymethylammonium bromide (RENSHAW and HOTCHKISS), A., 1232.
 Trimethylcarbethoxybenzylammonium bromide (RENSHAW and HOTCHKISS), A., 1232.
 Trimethyl- α -carbethoxybutylammonium bromide (RENSHAW and HOTCHKISS), A., 1232.
 Trimethyl- α -carbethoxyethylammonium bromide (RENSHAW and HOTCHKISS), A., 1232.
 Trimethylcarbethoxymethylammonium bromide (RENSHAW and HOTCHKISS), A., 1232.
 Trimethylcarbobenzoyloxymethylammonium bromide (RENSHAW and HOTCHKISS), A., 1232.
 Trimethylcarbo-*n*-butoxymethylammonium bromide (RENSHAW and HOTCHKISS), A., 1232.
 Trimethylcarbomethoxymethylammonium bromide (RENSHAW and HOTCHKISS), A., 1232.
 Trimethylcarboxylamidomethylammonium chloride (RENSHAW and HOTCHKISS), A., 1232.
 Trimethylchloroallylammonium bromides, and their gold and platinum salts (v. BRAUN, KÜHN, and WEISMANTEL), A., 1231.
 2:5:7-Trimethylcoumaran (CLAISEN and TIETZE), A., 1035.
 3:4:6-Trimethylcoumaran-2-one (v. AUWERS, BUNDESMANN, and WIENERS), A., 609.
 3:4:7-Trimethylcoumarin, 6-chloro- (WITTIG, BANGERT, and RICHTER), A., 301.
 $\beta\zeta$ -Trimethyl- Δ^8 -decadiene (ESCOURROU), A., 1120.
 $\beta\zeta$ -Trimethyl- Δ^8 -decen- ζ -ol (ESCOURROU), A., 1023.
 1:2:6-Trimethyl-1:4-dihydropyridine-3:4-dicarboxylic acid, ethyl ester (MUMM and LUDWIG), A., 961.
 Trimethyldipyrromethanetricarboxylic acids, ethyl esters (FISCHER and HALBIG), A., 621.
 Trimethylene bromo- and chloro-hydrins, naphthylurethanes from (BICKEL and FRENCH), A., 517.
 1:9-Trimethylenethanol, and its benzoyl derivative (v. BRAUN and BAYER), A., 173.
 Trimethylenedimethylethylsulphonium iodide (WEDEKIND), A., 146.
 Trimethylene glycol, bromohydrin, and its derivatives (SCHMIDT, v. KNILLING, and ASCHERL), A., 817.
 naphthylidurethane from (BICKEL and FRENCH), A., 517.
 dinitrophenyl ethers, and their derivatives (FAIREBOURNE and FOSTER), A., 144.
 1:9-Trimethylene-1:4:5:6:7:8-hexahydroanthracene (v. BRAUN and BAYER), A., 173.
 1:9-Trimethylene-5:6:7:8-tetrahydroanthracene, and its picrate (v. BRAUN and BAYER), A., 173.
 1:9-Trimethylene-5:6:7:8-tetrahydroanthranol, and its acetate (v. BRAUN and BAYER), A., 173.
 1:2:6-Trimethyl-4-ethyl-1:4-dihydropyridine-3:5-dicarboxylic acid, ethyl ester (MUMM and LUDWIG), A., 961.

Trimethylethylene. See β -Methyl- $\Delta\beta$ -butene.

2:4:5-Trimethyl-6-ethylphenol (V. AUWERS, BUNDESMANN, and WIENERS), A., 609.

2:3:4-Trimethyl-5-ethylpyrrole, and its picrate (FISCHER and WALACH), A., 411.

$\alpha\delta$ -Trimethyl fructose (ZEMPLÉN and BRAUN), A., 1229.

Trimethylglucolactones (LEVENE and MEYER), A., 49.

Trimethylglucosan (IRVINE and OLDHAM), A., 154.

Trimethyl glucose, crystalline form of (HAWORTH and SEDGWICK), A., 1228.

Trimethyl γ -glucose (PRINGSHEIM and KOLODNY), A., 822.

$\beta\gamma\delta$ -Trimethyl glucose, relation of, to the constitution of cellulose (MICHEEL and HESS), A., 1230.

$\beta\gamma$ (or $\beta\delta$)-Trimethylglucose, synthesis of (IRVINE and OLDHAM), A., 149.

$\beta\gamma$ -Trimethyl glucose 1:6-dinitrate (OLDHAM), A., 152.

Trimethyl- β -glucosan (SCHLUBACH and RAUCHENBERGER), A., 1127.

Trimethyl glycerol (GILCHRIST and PURVES), A., 153.

Trimethylglycerose, preparation of, and its acetone derivative (BÖSEKEN and DOMMISSE), A., 818.

δ -Trimethylguanidine, preparation of (SCHENCK), A., 156.

salts of (SCHENCK and KIRCHHOFF), A., 717.

$\beta\gamma$ -Trimethylhexane- $\beta\gamma$ -diol (LEERS), A., 596.

$\beta\delta\delta$ -Trimethylhexan- ϵ -one, and its derivatives (LEERS), A., 711.

$\beta\beta$ -Trimethylhexan- γ -one semicarbazone (LEERS), A., 711.

3:3:5-Trimethylcyclohexan-1-one, 1:3:4:5-tetrabromo- (BAKER), A., 521.

1:1:2-Trimethyl- Δ^2 -cyclohexene (GODCHOT and BEDOS), A., 169.
 α - and β -1:1':3:3':3':3'-Trimethylbicyclohexyl-5:5'-diones, and their disemicarbazones (BAKER), A., 521.

1:5:5-Trimethylhydantoin (BILTZ and SLOTTA), A., 1046.

3:5:5-Trimethylhydantoin, 1-nitro- (BILTZ and SLOTTA), A., 1046.

Trimethyl- $\beta\gamma$ - δ -hydroxypropylammonium iodide (FREUDENBERG and HESS), A., 935.

1:2:2-Trimethyl-1- α -hydroxypropylcyclopentane, 3-cyano-, and its o -nitrobenzoyl derivative (SALMON-LEGAGNEUR), A., 951.

Trimethyl-leucylglycine (ABDERHALDEN and SICKEL), A., 748.

2:3:3-Trimethyl-1-methylenecyclohexane. See Methyl- γ -cyclogeraniolene.

Trimethylmethylglucoside 6-mononitrate (OLDHAM), A., 152.

2:3:6-Trimethyl- β -methylglucoside, potassium derivative (SCHLUBACH and FIRGAV), A., 1126.

$\beta\zeta\gamma$ -Trimethyl- $\beta\zeta$ -octadiene (ESCOURROU), A., 1120.

$\beta\zeta\gamma$ -Trimethyl- $\Delta\delta$ -octen- ζ -ol (ESCOURROU), A., 1023.

Trimethylphenyl acetates, and benzoate, 2-amino-, benzoyl derivative (V. AUWERS, BUNDESMANN, and WIENERS), A., 609.

2-N-2':4':5'-Trimethylphenyl-1:2-naphthatriazole (CRIPPA), A., 307.

1:3:5-Trimethylpyrazole, and its derivatives (ROJAHN and KÜHLING), A., 847.

1:3:5-Trimethylpyrazole-4-carboxylic acid, and its ethyl ester (ROJAHN and KÜHLING), A., 846.

2:4:6-Trimethylpyridine, 3-nitro-, and its derivatives (VAN RIJN), A., 525.

2:3:4-Trimethylpyrrole, derivatives of (FISCHER and WALACH), A., 412.

and 5-cyano- (FISCHER and WALACH), A., 1256.

2:4:5-Trimethylpyrrole-3-acrylic acid (FISCHER and WALACH), A., 178.

2:3:4-Trimethylpyrrole-5-aldehyde, and its derivatives (FISCHER and WALACH), A., 1256.

2:3:4-Trimethyl-5-pyrrole-5-aldimine, and its salts (FISCHER and WALACH), A., 1256.

2:3:4-Trimethylpyrrole-5-carboxylic acid, and its ethyl ester (FISCHER and WALACH), A., 1257.

2:3:4-Trimethyl-5-pyrrolacetic acid, imino-, ethyl ester (FISCHER and WALACH), A., 1257.

2:3:5-Trimethylpyrrol-4-arsinic acid (FISCHER and MÜLLER), A., 75.

2:3:4-Trimethylpyrrol-3-carbethoxy-2:4-dimethylpyrrolenylmethene, and its salts and derivatives (FISCHER and WALACH), A., 1256.

2:3:4-Trimethylpyrrol-2:4-dimethylpyrrolenylmethene, and its salts and derivatives (FISCHER and WALACH), A., 1256.

2:3:4-Trimethyl-5-pyrrolyglyoxylic acid, ethyl ester (FISCHER and WALACH), A., 1257.

2:3:4-Trimethylpyrrol-2:3:4-trimethylpyrrolenylmethene, and its salts and derivatives (FISCHER and WALACH), A., 1256.

5:6:8-Trimethylquinoline, 2:3-dihydroxy- (HELLER, FUCHS, JACOBSON, RASCHIG, and SCHÜTZE), A., 620.

Trimethylstibine dihydroxide, and its derivatives (MORGAN and YARLESLEY), A., 508.

N,N'-S-Trimethyl- ψ -thiocarbamide, reactions of (SCHENCK and KIRCHHOFF), A., 717.

Trimethyltriethyldistannane (KRAUS and BULLARD), A., 1028.

Trimethyl xylonolactones (HAWORTH and WESTGARTH), A., 600.

Trimethyl γ -xylose (HAWORTH and WESTGARTH), A., 600.

Trinaphthaquinolbenzene (DZIEWOŃSKI and POCHWAŁSKI), A., 279.

Trinaphthylenebenzene. See Decacyclene.

Tri-(3-nitro-2-methylphenyl)bismuthine dichloride (SUPNIEWSKI), A., 966.

Triolin, evolution of poisonous vapours in decomposition of (WILKE-DÖRFURTH, SIMON, and GÜHRING), B., 288.

comparison of linoleum and (SIMON), B., 21.

Trioxymethylene, ethers derived from chlorohydrins and (BLANCHARD), A., 1023.

Tripe, nutritive value of proteins of (HOAGLAND and SNIDER), B., 846.

Triphenoxybenzene, s -trinitro-, action of hydroxylamino on (VAN RIJN), A., 510.

Triphenylacetamidine (SEN and RAY), A., 606.

Triphenylacetoxamic acid, rearrangement of hydroxamic acids isomeric with (JONES and ROOT), A., 280.

$\alpha\gamma$ -Triphenylacetyl- $\beta\delta$ -di- o -hydroxyphenylpentane, derivatives of (DICKINSON), A., 1144.

Triphenylamine, infra-red absorption spectrum of (BELL), A., 453.

action of nitric acid and of nitrogen peroxide on (RYAN and MARKEY), A., 606.

Triphenylamine, tri -, $tetra$ -, and $hexa$ -nitro- (RYAN and MARKEY), A., 606.

p -nitroso-, preparation of (PICCARD), A., 1080.

Triphenylamine-2-carboxylic acid, chloro-derivatives (GOMBERG and TABERN), A., 738.

Triphenylbenzopyrylium salts (LÖWENBEIN and ROSENBAUM), A., 955.

Triphenylbismuthine, and $trinitro$ -, and their salts (SUPNIEWSKI and ADAMS), A., 419.

Triphenylboron, alkali derivatives of (KRAUSE and POLACK), A., 628.

$\alpha\gamma\gamma$ -Triphenylbutane- $\alpha\beta$ -dione, γ -hydroxy- (KÖHLER), A., 309.

Triphenylcarbinol, hydrogenation of (IPATIEV and DOLGOFF), A., 949.

hydrochloride (HELPERICH and SIEBER), A., 517.

Triphenylcarbinol, o -nitroso-, and its acetyl derivative (TANASESCU), A., 1247.

Triphenylcarbinyl tribromophenyl ether (BICKEL and FRENCH), A., 517.

2:3:4-Triphenylchroman-2-ol (LÖWENBEIN and ROSENBAUM), A., 955.

2:3:4-Triphenylchromen-2-ol, and its derivatives (LÖWENBEIN and ROSENBAUM), A., 955.

2:3:4-Triphenylchromenyl, potassium derivative (LÖWENBEIN and ROSENBAUM), A., 955.

2:4:6-Triphenyl-1-ethyl-2:4-diketohexahydro-1:3:5-triazine (LANGE), A., 1158.

Triphenylguanidine, formation of, from thiocarbamilide (NAUNTON), A., 279.

$\alpha\beta\beta$ -Triphenyl- β -hydroxypropionic acid (DE FAZI), A., 289.

$\alpha\beta\beta$ -Triphenyl-lactic acid, photosynthesis of (DE FAZI), A., 835.

Triphenylmethane, p -hydroxy- p'' -diamino- (DUFT), A., 830.

hexanitro-, pyridyl derivatives of (TANASESCU), A., 1247.

Triphenylmethane dyes (DUISBERG, HENTRICH, SCHEPSS, and GRASSELLI DYESTUFF CORP.), (P.), B., 577.

manufacture of (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 815.

Triphenylmethane group (LUND), A., 723.

Triphenylmethane series, photochemical transformations in (LIFSCHITZ), A., 61.

Triphenylmethane-2''-carboxylic acid, 4:4'-dihydroxy-, salts and derivatives of (FINZI and ACCARINI), A., 1140.

Triphenylmethoxyphosphorus dichloride, p -bromo-, p -chloro-, and p -nitro- (BOYD and SMITH), A., 1161.

- Triphenylmethyl (GOMBERG and TABERN), A., 738.
preparation of (BLICKE), A., 508.
and its derivatives, reactions of, in liquid ammonia (KRAUS and ROSEN), A., 57.
- Triphenylmethylazocarboxylic acid, ethyl ester (WIELAND, VOM HOVE, and BÖRNER), A., 62.
- 2:3:4-Triphenyl-6-methylbenzopyrylium perchlorate (ZIEGLER, FRIES, and SALZER), A., 955.
- 2:3:4-Triphenyl-6-methylchromenols (ZIEGLER, FRIES, and SALZER), A., 955.
- 2:3:3-Triphenylmethylene-1:2-oxamine (BURKHARDT, LAFWORTH, and WALKDEN), A., 58.
- ζ-Triphenylmethylglucosyl fluoride, and its derivatives (HELFERICH, BÄUERLEIN, and WIEGAND), A., 386.
- Triphenylmethylhydrazinecarboxylic acid, ethyl ester (WIELAND, VOM HOVE, and BÖRNER), A., 62.
- Triphenylmethylphosphinic acid, *p*-bromo-, *p*-chloro-, and *m*-hydroxy-, and their salts and derivatives (BOYD and SMITH), A., 1161.
- 2:4:6-Triphenyl-1-methylpyridinium salts (ZIEGLER and FRIES), A., 410.
- αβγ-Triphenylpropane, 2:2':4:4':6:6'-hexa- and 2:2':3:4:4':6:6'-hepta-nitro- (PASTAR), A., 392.
- ββγ-Triphenylpropan-α-ol, and its derivatives (RAMART and AMAOAT), A., 710.
- 3:5:6-Triphenyl-1-propyl-2:4-diketohexahydro-1:3:5-triazine (LANGE), A., 1158.
- 2:4:6-Triphenylpyranol, 4-*p*-amino-, acetyl derivative, and its perchlorate (DILTHEY and BERRES), A., 177.
- 2:4:6-Triphenylpyridine-*N*-oxide, and its salts (MEISENHEIMER), A., 1152.
- 2:4:6-Triphenylpyrylium salts, 4-*p*-amino-, and its acetyl derivative, 2:4-*di-p*-amino-, 4-*p*-amino-2-*p*-hydroxy-, and 4-*p*-amino-2:6-*di-p*-hydroxy- (DILTHEY and BERRES), A., 177.
- Triphenylsilicilamine (KRAUS and ROSEN), A., 57.
- Triphenylsilicil compounds, reactions of, in liquid ammonia (KRAUS and ROSEN), A., 57.
- Triphenylstibine hydroxyselenocyanate (CHALLENGER, PETERS, and HALÉVY), A., 966.
- Triphenylstibine, triamino-, triacetyl derivative, preparation of (CHEM. FABR. v. HEYDEN), (P.), B., 901.
- 2:4:6-Triphenylthiophloroglucinol, chloro-derivatives (BROOKER and SMILES), A., 948.
- 2:4:8-Triphenylthioresorcinol, chloro-derivatives (BROOKER and SMILES), A., 948.
- Triphenyltin-acetic acid, and its sodium salt (CHAMBERS and SCHARER), A., 630.
- 2:4:6-Triphenyl-1:3:5-triazine, 5'-nitro-2'-hydroxy-, and 3':5'-di-bromo-2'-hydroxy- (LINDEMANN and THIELE), A., 1047.
- Triphenyltrimethylstannane (KRAUS and BULLARD), A., 1028.
- Triphthalimidotripropylamine, and its hydrochloride (MANN and POPE), A., 387.
- 1:3:5-Tripiperidinobenzene, 4:6-dinitro- (BORSOHE and TRAUTNER), A., 390.
- Tripropylamine, γγ'γ''-triamino-, and its salts and derivatives and complex compounds of nickel (MANN and POPE), A., 387.
- Tripropylmethanes, synthesis of (FISCHER and ERNST), A., 621.
- Triquinoyl, effect of, on conductivity of boric acid (BÖSEKEN and MEUWISSEN), A., 801.
- Trisazo-dyes, manufacture of (FARB. v. BAYER & Co.), (P.), B., 311; (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 528*; (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 659*.
- brown, for leather (VOSSEN and GRASSELLI DYESTUFF CORP.), (P.), B., 185.
- Triselenic-diuronic acid (MEYER and KASPER), A., 925.
- Tritetracontanone (GRÜN, ULBRICH, and KREZIL), A., 596.
- Triethallium methylglucoside (FEAR and MENZIES), A., 604.
- Tri-*p*-tolylarsine, freezing-point curves of mixtures of *p*-iodotoluene and (PEAR), A., 418.
- Tri-*o*-tolylbismuthine, and its salts (SUPNIEWSKI), A., 966.
- Tritolylbismuthines, and trinitro-, and their salts (SUPNIEWSKI and ADAMS), A., 419.
- Tri-*p*-tolylmethylazocarboxylic acid, ethyl ester (WIELAND, VOM HOVE, and BÖRNER), A., 62.
- Tri-*p*-tolylmethylhydrazinecarboxylic acid, ethyl ester (WIELAND, VOM HOVE, and BÖRNER), A., 62.
- 2:4:6-Tri-*p*-tolylthiolorcinol (BROOKER and SMILES), A., 948.
- 2:4:6-Tri-*p*-tolylthiophloroglucinol (BROOKER and SMILES), A., 948.
- 2-streptoTrivinylene-furfuraldehyde. See γ-2-Furylheptatrienal.
- Tri-*m*-xylylbismuthine, and its dihydrochloride (SUPNIEWSKI), A., 966.
- Troostite, change of austenite to (HONDA), B., 826.
- Tropacocaine hydrochloride, sterilisation of (MATSUNAMI), B., 76.
- Tropaeolum majus*, oil from seeds of (SUDBOROUGH, WATSON, AYYAR, and DAMLE), B., 954.
- Tropan derivatives, examination of, spectroscopically (BELL), A., 1264.
- Tropan-2-carboxylic acid, 4-chloro-3-bromo-, and its salts (LINDEMANN and HEINEMANN), A., 417.
- Tropeines, influence of configuration on activity of (CUSHNY), A., 1273.
- Trudellite (GORDON), A., 709.
- Truxene, structure and molecular weight of, and its derivatives (BRASS), A., 839.
- γ-Truxillacetamio acid (STOERMER and FRETWURST), A., 291.
- γ-Truxillamio acids, and their derivatives (STOERMER and FRETWURST), A., 291.
- ε-Truxillamic acid, and its ethyl esters (STOERMER, NEUMAERKER, and SCHMIDT), A., 290.
- ε-Truxillanic acid, and its salts and derivatives (STOERMER, NEUMAERKER, and SCHMIDT), A., 290.
- γ-Truxillethylamic acid (STOERMER and FRETWURST), A., 291.
- γ-Truxillic acid, and its derivatives (STOERMER and FRETWURST), A., 291.
- ε-Truxillio acid, configuration of, and its salts and derivatives (STOERMER, NEUMAERKER, and SCHMIDT), A., 290.
- Truxillic ketones (STOBBE and HENSEL), A., 1248.
- β-Truxinanilic acid, salts and derivatives of (STOERMER and LACHMANN), A., 613.
- β-Truxindimethylanilide (STOERMER and LACHMANN), A., 613.
- β-Truxinethylamic acid (STOERMER and LACHMANN), A., 613.
- β-Truxinic acid, configuration of, and its derivatives (STOERMER and LACHMANN), A., 613.
- Truxinio ketones (STOBBE and HENSEL), A., 1248.
- β-Truxinmethylanilic acids, and their derivatives (STOERMER and LACHMANN), A., 613.
- Trypanocidal action and chemical constitution (BALABAN and KING), A., 187; (KING and MURCH), A., 186; (HEWITT and KING), A., 746; (HEWITT, KING, and MURCH), A., 851.
- Trypanosomiasis, chemotherapy of (LOEVENHART and THOMAS), A., 1274.
- Trypsin, preparation of (SMORODINCEV and ADOVA), A., 1276.
- purification of, by electrodialysis (FRICKE, FISCHER, and BORCHERS), A., 791.
- hydrolysis of (KLEINMANN), A., 1276.
- rate of destruction of (RONA and KLEINMANN), A., 543.
- relation of, to the substrate (BRIGGS), A., 866.
- inhibition of the action of, by neutral substances (BLAGOVEST-SOEHNSKI), A., 433.
- digestion with low concentrations of (EHRENBERG), A., 203.
- in normal and diseased children (LUKACS), A., 636.
- pancreatic (WALDSCHMIDT-LEITZ and HARTENECK), A., 323.
- Trypsinogen, spontaneous activation of (WALDSCHMIDT-LEITZ and HARTENECK), A., 323.
- Tryptase, determination of, in serum (L. and X. UTRIN-LJUBOVZOV), A., 648.
- Tryptophan, absorption spectrum of (STENSTRÖM and REINHARD), A., 422.
- reaction of aldehydes with (KOMM), A., 959, 1045.
- determination of (FÜRTH), A., 633.
- determination of, in proteins (TILLMANS and ALT), A., 189; (LOONEY), A., 1050.
- Tscheffkinite (BOLDYREV; KAUFMAN), A., 266.
- "Tsuzn" seed oil, acids in (TSUJIMOTO), B., 637.
- Tuba. See *Derris*.
- Tuberculin (LONG and SEIBERT), A., 325.
- production of (YOSHIZAWA), (P.), B., 720.
- preparations (FARBW. VORM. MEISTER, LUCIUS, & BRÜNING), (P.), B., 109.
- composition of the active principle of (LONG and SEIBERT; LONG; EBERSON), A., 1178.
- Tuberculinic acid, 5-methyl cytosine from hydrolysis of (JOHNSON and COGHILL), A., 79.
- Tuberculosis (EBERSON), A., 1178.
- phosphorus in blood in (McCLUSKEY), A., 860.
- Tumours, oxidative mechanism in (HOLMES), A., 971.
- malignant, formation of (BIERICH; BIERICH and ROSENBOHM), A., 860.

- Tumours**, malignant, reduced and oxidised glutathione in (BIERIGH and KALLE), A., 1169.
- Tung oil** (*China wood oil*) (NAGEL and GRÜSS), A., 498; B., 164; (TOCH), B., 199; (FONROBERT and PALLAUF), B., 371; (WOLFF), B., 413; (EIBNER and SCHWAIGER), B., 448; (BAUER), B., 551.
- polymerisation of (WOLFF), B., 637.
- catalytic effect of lead and manganese on drying of (LUDWIG), B., 67.
- use of, in varnishes (KÖLLN), B., 333.
- solidified (RASQUIN), B., 201.
- films, frosting of (AUER), B., 501.
- detection of adulteration of (BOLTON and WILLIAMS), B., 712.
- determination of composition of, by means of the thiocyanogen value (KAUFMANN), B., 758.
- Tungsten**, manufacture of thin sheets of (GEN. ELECTRIC Co. and PATENT TREUHAND GES. F. ELEKTR. GLÜHLAMPEN), (P.), B., 370*.
- recovery of, from ores (GREGORY), (P.), B., 590.
- physical properties of, at high temperatures (ZWICKER), A., 893.
- absorption spectrum of (DORGELO), A., 556.
- K-absorption spectrum of (POSEJPAL), A., 216.
- L-absorption spectrum of (CHOFUTT), A., 652.
- arc spectrum of (LAPORTE), A., 1071.
- spectra of K-series rays of, scattered by graphite (MAGARIAN), A., 1187.
- M-series spectrum of (ZUMSTEIN), A., 1072.
- emission of secondary electrons by (STUELMAN), A., 331; (PETRY), A., 989.
- thermionic emission of (ZWICKER), A., 1188.
- thermionic and photoelectric work function of (HARRISON), A., 552.
- total radiation and specific resistance of, at high temperatures (GEISS), A., 461.
- critical potentials for (COMPTON and THOMAS), A., 1186.
- position of, in the potential series (RUSSELL and ROWELL), A., 911.
- conductivity changes during cold working of (GEISS and VAN LIEMPT), B., 752.
- thermal expansion of (HIDNERT and SWEENEY), A., 231.
- specific heat of (MAGNUS and DANZ), A., 1197.
- thermionic and adsorption properties of caesium on (BECKER), A., 988.
- temperature scale for (JONES), A., 892.
- crystals, deformation of (SMITHHELLS, ROOKSRY, and PITKIN), A., 997; (GOUCHER), B., 710.
- rods consisting of very large crystals of (N. V. PHILIPS' GLOEILAMPENFABR.), (P.), B., 132.
- mixed crystals of molybdenum and, corrosion of (VAN LIEMPT), A., 896.
- lattice parameter and density of (DAVEY), A., 112.
- cementation of ferrous alloys with (LAISSUS), B., 278, 633.
- cementation of iron and copper alloys by (LAISSUS), B., 545.
- alloying of, with uranium (GERO and WESTINGHOUSE LAMP Co.), (P.), B., 196.
- filaments, production of (BRITISH THOMSON-HOUSTON Co., LTD., DUSHMAN, and KOBER), (P.), B., 676.
- chemical method of reducing diameter of (SANTER and SCHRÖTER), B., 65.
- non-sagging spiral, for electric lamps (N.V. PHILIPS' GLOEILAMPENFABR.), (P.), B., 445.
- powder, determination of grain-size of (AGTE, SCHÖNBORN, and SCHRÖTER), B., 60.
- ductile, manufacture of (JUST and GEN. ELECTRIC Co.), (P.), B., 549*.
- homogeneous, manufacture of (GEWERKSCHAFT WALLRAM ABT. METALLWERKE, VOIGTLÄNDER, and KAUFELS), (P.), B., 754.
- Tungsten alloys** with alkaline-earth metals (BOVING and WESTERN ELECTRIC Co.), (P.), B., 133.
- with carbon, X-ray analysis of (WESTGREN and PHRAGMÉN), A., 1084.
- with cobalt and chromium, hard (SIEMENS & HALSKE and FETKENHEUER), (P.), B., 197.
- Tungsten trioxide**, green colour of (SMITH and LUKENS), A., 258.
- green colour of (VAN LIEMPT), A., 812.
- sulphide, crystal structure of (VAN ARKEL), A., 781.
- Tungstic acid** sols, preparation of (DUMANSKI, BUNTIN, DIJAT-SCHKOVSKI, and KNIGA), A., 469.
- Tungsten**:—
- Tungstic acid**, determination of foreign elements in (AGTE, BECKER-ROSE, and HEYNE), B., 60.
- Tungsten organic compounds**:—
- Tungstic acid, compounds of, with salicylic and gallic acids (WEINLAND, BABEL, GROSS, and MAI), A., 398.
- complex compounds of, with protocatechualdehyde (FERNANDES), A., 1036.
- Tungsten detection and determination**:—
- detection of, with pyrocatechol acetate and anilino or piperazine (MARTINI), A., 1244.
- determination of foreign elements in (AGTE, BECKER-ROSE, and HEYNE), B., 60.
- Tungsten wires**, specific electrical resistance of (TSUKAMOTO), B., 365.
- tensile strength of, at high temperatures (TAJME), B., 365.
- for electric lamps (EDISON SWAN ELECTRIC Co. and PERCIVAL), (P.), B., 953.
- single-crystal (OHASHI), A., 563.
- Turacin and hematin (KEILIN), A., 857.
- Turanose, structure of (KUHN and v. GRUNDHERR), A., 1127; (ZEMPLEN and BRAUN), A., 1229.
- Turbidimeter (BAYLIS), A., 378.
- Turbidity, supersaturation in titrations for (HAHN and BRUNN-GÄSSER), A., 672.
- Turbine oils (BAUM), B., 475.
- refining of (BUTKOV), B., 1002.
- effects of lead tetraethyl on deterioration of (HATTA), B., 307.
- Turbines, steam, corrosion and erosion of blading of (HONEGGER), B., 143.
- Turpentine**, extraction of (STEVENSON and LITTLE Co.), (P.), B., 924.
- pyrogenic oxidation of, in presence of copper gauze (ORLOV), B., 768.
- from *Picea excelsa* (VELCULESCU), B., 594.
- steam-distilled wood, improvement of (SHERK), (P.), B., 1021.
- Turpentine oil**, purification and stabilisation of (KLEIN), (P.), B., 837.
- colourless, production of (PRAETORIUS), (P.), B., 22.
- polymerisation of (KNECHT and MAURICE), B., 21.
- formation of camphor from (MURAYAMA), B., 75.
- German (BISCHOFF), B., 450.
- Turpentine substitutes**, manufacture of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 202.
- Turtle**, action of acids on the heart muscle of (SMITH), A., 639.
- Tutocaine**, microchemical reactions of (ROSENTHALER), A., 531.
- Tutor bark fibre** (BISHOP), B., 266.
- Tuyères**, for the introduction into furnaces and blast furnaces of materials or residues (DE BETHUNE), (P.), B., 711.
- Typhoid agglutinin**, isoelectric zone of (OTTENBERG and STENBUCK), A., 316.
- Typhus fever**, proteins in cerebrospinal fluid in (LING), A., 1055.
- Tyramine** (*p-hydroxyphenylethylamine*), preparation of, from tyrosine (ZEMPLEN), A., 402.
- microchemical identification of (VAN ITALIE and STEENHAUER), A., 182.
- sulphite (WASER), A., 65.
- determination of, in proteins (HANKE), A., 633.
- Tyrosinase** (ABDERHALDEN and BEHRENS), A., 542.
- specificity of (ABDERHALDEN and GUTMANN), A., 1276.
- identity of, from different sources (RAPER and SPEAKMAN), A., 434.
- action of, on phenols and amino-acids (McCANCE), A., 203.
- Tyrosine** (*p-hydroxyphenyl- α -aminopropionic acid*), absorption spectrum of (STENSTRÖM and REINHARD), A., 422.
- dry distillation of (WASER), A., 65.
- solubility of (SANO), A., 345.
- effect of salts on (ANDO), A., 898.
- action of tyrosinase on (RAPER), A., 977.
- preparation of tyramine from (ZEMPLEN), A., 402.
- thorium compound of reaction product of formaldehyde and (CHEM. FABR. FLORA), (P.), B., 464.
- determination of, in proteins (HANKE), A., 633; (LOONEY), A., 1050.
- Tyrosine**, bromo-, crystallography and optical properties of (ZARTNER), A., 461.
- Tyrosylalaninehydantoin**, synthesis of (HAHN and GILMAN), A., 180.
- Tyrosylproline anhydride** (ABDERHALDEN and SICKEL), A., 748.

U.

- Ulex europæus*, glucoside from flowers of (BRIDEL and BÉGUIN), A., 1183.
- Ulexogenol** (BRIDEL and BÉGUIN), A., 1183.
- Ulexoside** (BRIDEL and BÉGUIN), A., 1183.
- Ulmus campestris* (elm), constituents of bark of (ZELLNER), A., 646.
- sterol from (SCHMID and STÖHR), A., 949.
- Ultra-filter** (ZSIGMONDY), A., 815.
- electro- (BRONFENBRENNER), A., 1118.
- Ultra-filtration** (DUCLAUX and ERRERA), A., 240.
- and dialysis (HEYMANN), A., 31; (REINOLDT), A., 120.
- with collodion membranes (GROLLMAN), A., 1052.
- nickel membranes for (MANNING), A., 706.
- Ultra-microscope** (SPIERER), A., 931.
- Umbelliferone**, use of, as an indicator (ROBL), A., 1115.
- Uncineol**, identity of, with eudesmol (PENFOLD), A., 1042.
- Undecamethylmelzitose** (ZEMPLÉN and BRAUN), A., 1229.
- Undecane- α -dicarboxylic acid**, esters (CHUIT), A., 499.
- Undecane- α -diol**, and its diacetyl derivative (CHUIT), A., 499.
- cycloUndecanone**, and its semicarbazone (RUZICKA, STOLL, and SCHINZ), A., 615.
- Undecane-8-on-e-ol**, and its semicarbazone (NICOLLE), A., 383.
- Δ^8 -Undecene**, $\alpha\beta$ -triiodo- (GRIGNARD and PERRICHON), A., 380.
- Udecine**, α -bromo- and α -iodo- (GRIGNARD and PERRICHON), A., 382.
- Undecoic acid**, thallos salt (WALTER), A., 712.
- Undecoic acid**, λ -bromo- and λ -hydroxy-, melting and boiling points of (VERKADE, HARTMAN, and COOPS), A., 686.
- n -Undecoylacetone**, and its copper salt (MORGAN and HOLMES), A., 148.
- Unsaturated compounds**, formation of, from halogenated open-chain derivatives (HASSELL and INGOLD; GOSS and INGOLD), A., 820; (HUNTER), A., 1125.
- chemistry and pharmacology of (v. BRAUN, KÜHN, and SIDDQUI), A., 850.
- oxidation of, by perbenzoic acid (MEERWEIN, OGAIT, PRANG, and SERINI), A., 722.
- inhibiting agents in (SMITH and WOOD), B., 713.
- orienting influence of free and bound ionic charges on simple or conjugated (ING and ROBINSON), A., 946.
- with conjugated double linkings (VAVON and JAKES), A., 934.
- addition of iodide bromide and hypiodous acid to (HOLDE and GORGAS), A., 269.
- reactions of nitroso-compounds with (ALESSANDRI), A., 287, 1038.
- addition of sulphite to (HÄGGLUND and RINGBOM), A., 363.
- homocyclic, chemistry of polycyclic compounds in relation to isomeric (HASSELL and INGOLD), A., 953.
- Uracil**, preparation of, from carbamide (DAVIDSON and BAUDISCH), A., 1154.
- action of *Bacillus coli* on (HAHN and SCHÄFER), A., 1062.
- Uraninite** (*pitchblende*) (KIRSCH), A., 267.
- ancient, age of (RICHARDS and HALL), A., 449.
- Colorado, zirconium in (FREE), A., 709.
- Uranium**, metallic (GOGGIN, CRONIN, FOGG, and JAMES), B., 244.
- manufacture of (WESTINGHOUSE LAMP Co. and NEARDEN), (P.), B., 635.
- purification of (MOORE and GEN. ELECTRIC Co.), (P.), B., 197.
- disintegration products in spectrum of (NAGAOKA and FUTAGAMI), A., 1077.
- effect of sunlight on radioactivity of (MARACINEANU), A., 6.
- alloying of, with tungsten (GERO and WESTINGHOUSE LAMP Co.), (P.), B., 196.
- Uranium compounds**, reactions produced by sunlight in presence of (ALOY, VALDIGUIÉ, and ALOY), A., 850.
- halogen unstable, stable solutions of (TRUTWIN), (P.), B., 237.
- Uranium salts**, fluorescence of (PERRIN), A., 558.
- activation of luminescence by (NICHOLS and SLATTERY), A., 659.
- Uranium carbide**, action of nitrogen on (HEUSLER), A., 909.
- iodates, phosphites and selenites (LOBANOV), A., 372.
- nitrides (HEUSLER), A., 909.
- dioxide, reduction of, by carbon (HEUSLER), A., 909.
- sulphate, use of, in volumetric analysis (VORTMANN and BINDER), A., 263.
- sulphides, red and orange (AUGER and LONGINESOU), A., 588.
- Uranyl salts**, fluorescence and absorption spectra of (DIEKE and VAN HEEL), A., 454; (VAN HEEL), A., 455.

Uranium:—

- Uranyl nitrate**, equilibrium of nitric acid, water, and (COLANT), A., 1114.
- alkali phosphites and pyrophosphates (ROSENHEIM, FROMMER, GLÄSER, and HÄNDLER), A., 696.
- Uranic acid**, compounds of, with selenic and sulphuric acids (MEYER and KASPER), A., 925.
- Uranates**, preparation of (TAMMANN and ROSENTHAL), A., 1114.
- Uranium organic compounds**:
- Uranium**, compound of hexamethylenetetramine with (ISSARD), A., 1158.
- Uranic acid**, complex compounds of, with hydroxyquinol and 1:2-dihydroxynaphthalene (FERNANDES), A., 1036.
- Uranium detection and determination** :—
- detection of (TANANAEV and PANTSCHENKO), A., 377, 930.
- determination of, by reduction (SOMEYA), A., 705, 1117.
- Uranium-X**, extraction and determination of (DE), A., 220, 331.
- Uranium lead**, atomic weight of (RICHARDS and HALL), A., 449.
- Uranium minerals**, composition and age of (DAVIS), A., 380.
- disintegration of (HOLMES), A., 654.
- Russian (KURBATOV), A., 1022.
- Uranium ores**, determination of uranium, vanadium, copper, and iron in, volumetrically (RUSSELL), B., 328.
- Urea** (*carbamide*), manufacture of (NORSK HYDRO-ELEKTRISK KVAELSTOFAKTIESELSKAB), (P.), B., 379.
- finely crystalline, production of (WARGÖNS AKTIEBOLAGET and LIDHOLM), (P.), B., 208.
- solid, production of, from solutions (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 251.
- condensation of formaldehyde with (BARTHÉLEMY), B., 955.
- availability of nitrogen in (PRINCE and WINSOR), B., 458.
- manufacture of fertilisers containing (A.-G. F. STICKSTOFF-DÜNGER), (P.), B., 336.
- fertiliser containing calcium nitrate and (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 293.
- in blood (TASHIRO), A., 856.
- alkalosis from ingestion of (ADOLPH), A., 1172.
- excretion of (BOURQUIN and LAUGHTON), A., 636.
- basal excretion of (RICHT and MINET), A., 1053.
- determination of (WEARN and RICHARDS; ELLINORHAUS), A., 327.
- determination of, by the Folin-Wu method (BUTKA and MEISNER), A., 1184.
- determination of, in blood (POHORECKA-LELESZ), A., 212; (C. and S. AUGUSTE), A., 648; (CLARK and COLLIP; PÉCHON), A., 763; (BOIVIN; COOPER), A., 1067.
- determination of, in cerebrospinal fluid (GRAHAM and MAC-CARTY), A., 1168.
- determination of ammonia and, with permittite (POHORECKA-LELESZ), A., 764.
- See also Carbamide.
- Urea stibamine**, preparation of (BRAHMACHARI), A., 864.
- Urease**, occurrence of, in *Limulus* (LOEB and BODANSKY), A., 434.
- formation of, by bacteria (RUBENTSCHIK), A., 1178.
- influence of beryllium on the formation of (LEHR), A., 434.
- isolation and crystallisation of (SUMNER), A., 1061.
- recrystallisation of (SUMNER), A., 1176.
- ultrafiltration of solutions of (JACOBY), A., 434.
- effect of natural waters on activity of (LOEPER, MOUGEOT, and AUBERTOT), A., 1176.
- action of, on carbamide (SUMNER), A., 758.
- Ureidodiethylacetoneitrile** (BILTZ and SLOTTA), A., 1046.
- Ureidomethylethylacetoneitrile** (BILTZ and SLOTTA), A., 1046.
- Urethane** (*ethyl carbamate*), equilibrium of benzene and (PUSHIN), A., 245.
- Urethanes** (BASTERFIELD and PAYNTER), A., 1027; (BASTERFIELD and WRIGHT), A., 1138.
- miotic activity and isomerism of (STEDMAN), A., 974.
- substituted, preparation of (BASTERFIELD, WOODS, and WRIGHT), A., 1132.
- pp -Urethanobenzamidophenylarsinic acid** (ÉTABL. POULENC FRÈRES), (P.), B., 899.
- Uric acid**, formation of, by bacteria (MCDONALD, LEVINE, and GLEASON), A., 1277.
- oxidation of (PALIT and DHAR), A., 822; (BILTZ and SCHIEF MANN), A., 741.
- electrochemical oxidation of (FICHTER and KERN), A., 742.
- content of, in blood (FLATOW), A., 1166.
- effect of light on, in blood (KOCU and REED), A., 319.
- in plasma (JONES), A., 318.

- Uric acid**, katabolism of, in vertebrates (PRZYLECKI), A., 1056.
 excretion of, and uricolysis (THANNHAUSER, LURZ, and v. GARA), A., 973.
 excretion of, by kidneys (GREMELS and BODO), A., 1053.
 effect of caffeine and theobromine on formation and excretion of (CLARK and DE LORIMIER), A., 974.
 as end product of purine metabolism in man (PRZYLECKI), A., 1171.
 glycol, reactions of (BILTZ and KLEMM), A., 962.
 glycol ethers, and their degradation by alkalis (BILTZ and KLEIN), A., 182.
 determination of, in blood. See under Blood.
 determination of, in milk and blood (REIF), A., 212.
Uric-oxydase in blood (FLATOW), A., 1166.
Urine, colloid chemistry of (v. HAHN), A., 352, 1005; (BECHHOLD), A., 902.
 electrical factor in secretion of (KELLER and GICKLIORN), A., 970.
 effect of injection of salt solutions on secretion of (MISUMI), A., 1168, 1169.
 effect of calcium and potassium salts on secretion of (BRULL and EIONHOLTZ), A., 88.
 changes in, after exercise (WILSON, LONG, THOMPSON, and THURLOW), A., 90.
 effect of sleep on composition of (SIMPSON), A., 540.
 reducing and iodine-combining power of (BARRENSCHEEN and POPPER), A., 88.
 relation between acidity of, and gastric acidity, and the effect of histamine (ACKMAN), A., 859.
 excretion of amino-acids in (SCHMITZ and SIWON), A., 88.
 origin of ammonia in (RABINOVITCH), A., 1053.
 relation between ammonia and acid in (RAFFLIN), A., 858.
 action of thorium-X on ammonia formation in (MAUBERT), A., 759.
 arsenic content of (BANG), A., 195.
 excretion of calcium, magnesium, and phosphorus in, after parathyroidectomy and after injections (GREENWALD and GROSS), A., 206.
 excretion of carbon and nitrogen in, on keeping and in adrenalinic diabetes (WADA), A., 753.
 influence of acids, alkalis, and mineral waters on the carbon-nitrogen ratio in (WATANABE), A., 639.
 effect of gland preparations on the carbon-nitrogen ratio of (WADA), A., 1064.
 effect of insulin on carbon-nitrogen ratio in (WADA), A., 760.
 effect of spaying and pregnancy on the carbon-nitrogen ratio of (WADA), A., 1064.
 cardiac stimulant in (FREY and KRAUT), A., 1168.
 crystalline pigment from the action of *p*-dimethylaminobenzaldehyde on (SCHEFF; HÄRI), A., 858.
 diastase in, in daytime (COHEN), A., 636.
 excretion of fat in (FAERBER), A., 752.
 guanidine substances in, in tetany (KÜHNAU), A., 196, 1054.
 lactic acid in, after exercise (LILJESTRAND and WILSON), A., 90.
 influence of insulin on, in avitaminosis (ROSENWALD), A., 436.
 melanins in (BRAHN), A., 318.
 effect of diet on pepsinogen of (PECZENIK and KAWAHARA), A., 1275.
 excretion of phosphates in, during water diuresis (HAVARD and REAY), A., 424.
 influence of exercise on the inorganic phosphates of (HAVARD and REAY), A., 428.
 excretion of phosphoric acid in, in health and disease and after treatment with anticerebral serum (TSUCHIYA), A., 538.
 porphyrins in (FISCHER), A., 858.
 nature of proteins of (HYND), A., 859.
 crystalline proteins of, in nephritis (WELKER, THOMAS, and HEKTOEN), A., 971.
 rare elements in (BERG), A., 195.
 excretion of sugar in (BLATHERWICK, BELL, HILL, and LONG), A., 424.
 nature of sugar in (PATTERSON), A., 970.
 effect of phosphates on sugar in (FRIEDLÄNDER and ROSENTHAL), A., 752.
 containing sugar, clarification of, by charcoal (KOLTHOFF), A., 444.
 excretion of urea and chlorine in (REHBERG), A., 858.
 frog's, formation of, in frog's kidneys (WANKELL), A., 317.
 glomerular, concentration of chlorides in (WEARN and RICHARDS), A., 195.
- Urine**, glomerular, composition of (WEARN and RICHARDS), A., 1053.
 rabbit's, determination of allantoin in (CHRISTMAN), A., 1284.
Urine, analytical methods relating to:—
 detection of bismuth in (GANASSINI), A., 328.
 detection and determination of bile in (KLEESATTEL), A., 1169.
 detection and determination of guanidines in (GREENWALD), A., 1068.
 determination of acetone substances in (BEHRE and BENEDICT), A., 1282.
 determination of albumin in (EXTON), A., 1184.
 determination of bismuth in (HILL), A., 984.
 determination of calcium in (INOUE), A., 984.
 determination of carbon in (KAUFFMANN-COSLA and LEIBOVITZ), A., 327.
 determination of cystine in (LEWIS and WILSON), A., 1068.
 determination of dextrose in (ROSENTHALER), A., 327.
 determination of glycuronic acid in (BRÜLE, GARBAN, and AMER), A., 317.
 determination of iodine in (v. BODÓ), A., 328.
 determination of nitrogen in (FOIT), A., 648; (MESTREZAT and MOREL), A., 764; (MESTREZAT), A., 858.
 determination of nitrogen in, by the Kjeldahl method without distillation (POHORECKA and LELESZ), A., 212.
 determination of organic acids in (PALMER), A., 859.
 determination of sodium thiosulphate in (HOLBØLL), A., 753.
 determination of sugar in (FOLIN), A., 648; (STOFFELLA), A., 764; (BENEDICT), A., 984; (FOLIN and SVEDBERG), A., 1282.
 determination of sulphates in, nephelometrically (LORBER), A., 212.
 determination of xanthine bases in (FLEURY and GENEVOIS), A., 1284.
Urobilinuria in rabbits fed on cow's and goat's milk (BROUWER), A., 425.
Uroporphyrin, constitution of, and its transformation into coproporphyrin (FISCHER and HILGER), A., 189.
Urushiol, synthesis of homologues of (KAWAI), A., 609.

V.

- Vaccines**, preparation of (WOOD), (P.), B., 610.
Vacuum, devices for (SCHIRMANN), A., 1223.
Vacuum pans (WHITE), (P.), B., 72.
 heating of (BLAIR, CAMPBELL, & McLEAN and BLAIR), (P.), B., 425.
Vacuum vessels, apparatus for taking samples from (FARBW. MEISTER, LUCIUS, & BRÜNING), (P.), B., 473.
Valency (NORRISH and JONES), A., 226; (DE), A., 887.
 theories of (BURGARTH), A., 560; (SWIENTOSLAWSKI), A., 662.
 development of conception of (NASINI), A., 1223.
 studies of (LOWRY and OWEN; LOWRY and SASS), A., 454.
 in relation to magnetic properties (BOSE), A., 111.
 rôle of magnetism in (WILLIAMS), A., 887.
 in relation to electronic structure (GRIMM and SOMMERFELD), A., 560.
 anomalous (GOMBERG), A., 111.
 co-ordination (BUTLER), A., 111.
 of two *o*-hydroxyl groups (FERNANDES), A., 1036.
 residual (SCHUSTER), A., 670.
 of organic compounds (WEISSENBERGER, SCHUSTER, and PIATTI), A., 458.
 secondary (BLANCHARD and GILLILAND), A., 561.
^{iso}**Valeraldehyde**, reduction potential of (SHIKATA and TACHI), A., 1105.
 condensation of, with ammonia in presence of alumina (OPARINA), A., 844.
 2:4-dinitrophenylhydrazones (BRADY and ELSMIE), A., 394.
Valerian. See *Valeriana officinalis*.
Valerian root, Indian, constituents of the oleo-resin and fatty matter of (BULLOCK), B., 802.
Valeriana officinalis, essential oil of, from Sukhum, Caucasia (KRASILEVSKI), B., 340.
ⁿ-**Valeric acid**, thallos salt (WALTER), A., 712.
^p-cuminyl ester (BERT), A., 285.
Valeric acid, δ -amino-, fate of, in phloridzinised dogs (CORLEY), A., 1171.
 $\alpha\delta$ -diamino- γ -hydroxy-. See Ornithine, γ -hydroxy- γ -hydroxy-, configurational relationship of β -hydroxybutyric acid and (LEVENE and HALLER), A., 1122.

- Valeric acid, thio-, substituted amides of (Worrall), A., 161.
*iso*Valeric acid, *d*-bornyl ester (Peignier), A., 1251.
*iso*Valeric acid, α -bromo-, resolution of (Berlingozzi and Furia), A., 819.
 α -hydroxy-, ethyl ester (Nicolle), A., 333.
d-Valeric acid, γ -hydroxy-, configurational relationship of, to *d*- β -hydroxybutyric acid and *d*-lactic acid (Levene and Haller), A., 1024.
Valeric acids, amino-, and their salts and derivatives (Anziegin, Gulewitsch, and Nordheim), A., 1111.
Valerimidomethyl ether (Hill and Rabinowitz), A., 516.
 γ -Valeritriene, and its salts (Oparina), A., 844.
 β -*iso*Valeryl- α -methylpropionic acid, and its semicarbazone (Jones and Smith), A., 72.
*iso*Valeryl-*p*-phenetidine (Hill and Rabinowitz), A., 517.
Valerylresorcinols (Dohme, Cox, and Miller), A., 738.
N-*iso*Valerylsalicylamide (Moucka and Rögl), A., 626.
*iso*Valerylsarcosine, bromo- (Levene, Simms, and Pfaltz), A., 1265.
Valine, hydroxy-, and its derivatives (Schryver and Buston), A., 749.
dl-Valine, butyl ester, and its salts (Morgan), A., 276.
Valonia, penetration of indicators into the sap of (Brooks), A., 639.
Valves, capillary, for gases (Hopfield), A., 707.
Vanadic acid. See under Vanadium.
Vanadinite from Morocco (Comucci), A., 595.
synthetic (Carobbi and Restaino), A., 811.
Vanadium, extraction of, from petroleum ash (Baldeschwieler and Standard Development Co.), (P.), B., 133.
recovery of (Frick and Anaconda Copper Mining Co.), (P.), B., 885.
from ilmenite (Radium & Rare Earths Treatment Co.), (P.), B., 756.
from petroleum (Oberle), (P.), B., 237.
spectrum of ionised (Meggers), A., 1186.
spark spectrum of (Lang), A., 874.
Vanadium alloys, preparation of (Boerioke), (P.), B., 63.
Vanadium compounds, recovery of, from iron ores containing vanadium and titanium (Kjellberg), (P.), B., 321, 549*.
halogen unstable, stable solutions of (Truttwin), (P.), B., 237.
Vanadium oxytrichloride, solvent power of (Brown and Snyder), A., 18.
oxide, spectrum of mixed titanium and molybdenum oxides and (Birtley), A., 446.
peroxide gels, formation of (Ghosh, Chakravarti, and Dhar), A., 676.
sols, ageing of (Freundlich and Dannenberg), A., 471.
Vanadous salts, reduction of carbonyl compounds by (Conant and Cutter), A., 616.
sulphate as a reducing agent (Russell), A., 592.
Vanadic acid, detection of, with hydrogen peroxide (Meyer and Pawletta), A., 1020.
Vanadates of the heavy metals (Ephraim and Beck), A., 370.
Pervanadic acid, so-called, constitution of (Meyer and Pawletta), A., 1218.
Vanadium organic compounds, preparation of (Farb. v. Bayer & Co.), (P.), B., 514.
Vanadium guanidine alum (Cannari), A., 55.
Vanadium detection and determination:—
detection of, with pyrocatechol acetate and aniline or piperazine (Martini), A., 1244.
determination of small quantities of (Heczko), A., 1020.
determination of, in ferrovanadium (Someya), B., 278.
determination of, in presence of iron (Someya), A., 705.
determination of, in uranium ores, volumetrically (Russell), B., 328.
Vanadium minerals, Russian (Kurbatov), A., 1022.
Vanadium ores, treatment of (Stokes and U.S. Processes Co.), (P.), B., 915.
Vanilla extract, piperonal in (Gnadinger), B., 689.
flavourings, use of monel metal for containers for (Hollingshead and Otterbacher), B., 848.
oleoresins, commercial, evaluation of (Wilson and Sale), B., 384.
o-Vanillin, synthesis of, and its *p*-nitrophenylhydrazone (Mauthner), A., 404.
detection of, by the nitric acid test (McLang), B., 767.
5-Vanillylidene-2:3-diphenylisothiohydantoin, 5-bromo-, 5'-chloro-, and 5-nitro- (Hann and Markley), A., 623.
Vapours, recovery of, from gases (Scheuble), (P.), B., 178.
removal of dust from (Salerni), (P.), B., 304.
apparatus for purifying, cooling, heating, mixing, or absorbing (Thiesen), (P.), B., 255.
fractional condensation of (Bell and Sinclair Refining Co.), (P.), B., 345.
absorption of (Lemale), (P.), B., 32.
apparatus for (Chem. Werke Lothringen), (P.), B., 79.
flameless catalytic combustion of (Schimmel), (P.), B., 396.
flowing, electrostatic separation of suspended particles from (Lurgi Apparatebau-Ges.), (P.), B., 224.
saturated, scattering of light by (Ewing), A., 230.
of organic substances, separation of, from gases (N.V. Algem. Chem. Productenhandel), (P.), B., 223.
separation of solid and liquid constituents from (Szamatolski and Blohm), (P.), B., 648.
Vapour pressure (Berliner and May), A., 1198.
micro-method for determination of (Sanchez), A., 666.
and heat of evaporation at low temperatures (Verschaffelt), A., 894.
lowering of, in relation to the degree of saturation (Bencowitz), A., 29; (Bencowitz and Hotchiss), A., 787.
of alkali halides (Frook and Rodebush), A., 1198.
of binary mixtures (Sameshima), A., 908.
of crystal hydrates (Bergman), A., 125.
of liquids, measurement of (Jolly and Briscoe), A., 1021.
of binary mixed liquids (Weissenberger, Schuster, and Zack), A., 570.
and viscosity of binary mixed liquids (Yajnik, Bhalla, Talwar, and Soofi), A., 235.
and surface tension of binary mixed liquids (Yajnik, Sharma, and Bhargadwaj), A., 1000.
of metals (Rodebush and Dixon), A., 117.
Varnishes, formation of, in the cold (Eibner and Rasquin), B., 247.
manufacture of (Schwartz, Gil-Camporo, and Leach), (P.), B., 373.
composition for removal of (Littmann and Commercial Solvents Corp.), (P.), B., 203; (Phillips and Goss), (P.), B., 554.
solvent which increases the drying capacity of (Lugeon), (P.), B., 248.
use of tung oil in (Kölln), B., 333.
deposits in (Wilborn), B., 714.
flash points of (Smith and Crow), B., 594.
primary compositions for (Roth and Weithöner), (P.), B., 67.
cellulose ester, new methods of using (Rasquin), B., 450.
cellulose nitrate (Gross, Sherwood, & Heald, Ltd., Phillips, and Thurlow), (P.), B., 760.
insulating, drying of, with ozone (Spence and Cochran), B., 888.
linseed oil, detection of resins in (Brauer), B., 595.
oil, analysis of (Gérard-Vaudin), B., 554.
paracoumarone (King and Barrett Co.), (P.), B., 681.
containing synthetic resins (Ellis), (P.), B., 68.
rosinate, chemical reactions in preparation of (Wolff), B., 501.
rubber, manufacture of (Mechanical Rubber Co.), (P.), B., 136.
shellac, U.S. Govt. specification for (U.S. Bur. Standards), B., 501.
testing of, by the Liebermann reaction (Stock), B., 888.
detection of rosin in (Wolff), B., 837.
determination of colour of (Wilborn), B., 136; (FonRobert and Pallau), B., 201, 450, 760.
determination of resin and fatty acids in (Wolff), B., 202.
determination of solvents in (Wolff), B., 136.
receiver for (Toeldte), B., 202.
Varnish bases (Bergolin-Werke W. van den Bergh), (P.), B., 761.
Varnish films, micrography of (Stern), B., 638, 796.
Varnish industry (Toch), B., 837.
problems of (Morgan), B., 373.
use of the quartz lamp in (Schmidinger), B., 760.
Varnish removers containing furfuraldehyde (Ellis and Chade-Lod Chemical Co.), (P.), B., 890.
preservation of (Fulton and Bowman), (P.), B., 27, 339.
Vegetables, drying of (Knapf), B., 509; (Flach), (P.), B., 213.

- Vegetables, storage of (THOMPSON), (P.), B., 383*.
 fermentation of (MATZKA), (P.), B., 1027.
 effect of nutrition on colloidal properties of (CRIST), B., 842.
 preserved, determination of copper in (BIAZZO), B., 382.
- Vegetable materials, extraction of (MABEE and MABEE PATENTS CORP.), (P.), B., 214.
- Velocity of decomposition of solids (CENTNERSZWER and BRUŽS), A., 581.
- Velocity of reaction, theory of (BJERRUM), A., 131.
 radiation theory of (SYRKIN), A., 1009.
 formula for (SANO), A., 909.
 determination of constants of (SHEPPARD), A., 913.
 calculation of constants of (SCHMID), A., 480.
 and molecular attraction (MAASS and SIVERTZ), A., 131.
 and fluorescence (PERRIN and CHOUCROUN), A., 884.
 effect of temperature on (TOLMAN), A., 32.
 in organic solvents in relation to temperature (ESSEX and GELOMINI), A., 579.
 and thermodynamics (JOUQUET), A., 362, 913; (SCHEFFER and BRANDSMA), A., 913.
 from dilatometric and stalagmometric investigations (BEN-BATH and others), A., 363.
 influence of rate of stirring on (HUBER and REID), B., 519.
 influence of lyophilic colloids on (SAUER and DIEM), A., 914.
 effect of organic colloids on (ISGARISCHEV and BOGOMOLOVA), A., 132.
 of gases (CHRISTIANSEN), A., 1213.
 of gas reactions involving ions (BODENSTEIN), A., 690.
 rapid, measurement of (HARRIDGE and ROUGITON), A., 1213.
 unimolecular (ALEXIEV), A., 32; (GUGGENHEIM), A., 1009.
- o*-Veratraldehyde, synthesis of, and its *p*-nitrophenylhydrazone (MAUTHNER), A., 404.
- Veratraldehyde, 6-nitro-, derivatives of (DE LANGE), A., 278.
- Veratric anhydride (ALLAN and ROBINSON), A., 1149.
- Veratrole, 3,6-diamino-, and 3,6-dinitro- (OXFORD), A., 1036.
- N*- β -Veratrylethyl-3:4-methylenedioxyhomonaphthalamic acid, and its methyl ester (HAWORTH and PERKIN), A., 964.
- N*- β -Veratrylmethylmethylenedioxyhomophthalimides (HAWORTH and PERKIN), A., 964.
- Veratrylideneacetone, and its dibromide (VAN DUIN), A., 612.
- 2-Veratrylidene-4:6-dimethoxycoumaranone (PERKIN, RAY, and ROBINSON), A., 733.
- 2-Veratrylidene-1-hydrindone (PERKIN, RAY, and ROBINSON), A., 733.
- 3-Veratrylidene-7-methoxychromanone hydrochloride (PERKIN, RAY, and ROBINSON), A., 733.
- Veratryl-*m*- and -*p*-methoxyphenyldiveratropyrines, and their salts (BRADLEY and ROBINSON), A., 1145.
- Verbanone, pharmacology of (SIEGEL), A., 320.
- Verbenone, pharmacology of (SIEGEL), A., 320.
- Vermin, extermination of (FARR. v. BAYER & Co.), (P.), B., 470*;
 (STOLTZENBERG), (P.), B., 614.
- Vermin-killer (DERRÉGIBUS), (P.), B., 998.
- Veronal (5:5-diethylbarbituric acid), compounds of, with anti-pyrene and sarcosine anhydride and acetamidoantipyrine (PFEIFFER and ANGERN), A., 739.
 distinction between propanal, luminal, and (EKKERT), B., 802.
- Vessels, coating of, with an alloy (DREIFUSS), (P.), B., 496*.
- Vesuvius, cesium compounds in lava of (ZAMBONINI and CONIGLIO), A., 816.
 cesiferous potassium fluoborate from (ZAMBONINI), A., 934.
 sodium and potassium silicates from fumaroles of (ZAMBONINI and CAROBB), A., 1119.
- Vinasses, recovery of ammonia from (GRIGNARD), B., 562.
 fertilisers and glycerin from (SOC. DES ÉTABL. BARBET), (P.), B., 893.
- Vine louse. See *Phylloxera*.
- Vine-pests. See under Pests.
- Vinegar, determination of dry matter and sugar in (REIF), B., 25.
 determination of tannic acid in (REIF), B., 25.
- Vinyl chloride, photopolymeride of (FLUMIANI), A., 677.
 esters, polymerisation of (CONSORTIUM FÜR ELEKTROCHEM. IND., HERMANN, and BAUM), (P.), B., 680.
- strepto*Vinylene-furfuraldehyde. See 2-Furylacraldehyde.
- Viola cornuta*, methyl salicylate glucoside from (PROARD), A., 715.
- Viola rossica*, oil from (TREFF, RITTER, and WITTRICH), B., 850.
- n*- and *iso*-Violanthrones, dibenzoyl derivatives (GEORGEACOPOL), A., 840.
- Violanthrone dyes from benzofluorenones (GEORGEACOPOL), A., 840.
- Violanthrone-1:12-dicarboxylic acid (GEORGEACOPOL), A., 840.
- o*-Violones (DILTHEY, FRÖDE, and KOENEN), A., 1254.
- Violuric acid, absorption spectra and ionisation of (MORTON and TIPPING), A., 9.
 ferrous salt (KÜSTER, ERFLE, v. ROLL, and SCHILLER), A., 821.
- Violutside (PICARD), A., 715.
- Viscose (KITA, TOMIHISA, and ICHIKAWA), B., 481; (BERL and BITTER), B., 943; (BERL and LANGE; KITA and TOMIHISA; KITA, AZAMI, and TOMIHISA), B., 944.
 laboratory preparation of (MORSE), B., 482.
 manufacture of (DREYFUS), (P.), B., 402*.
 recovery of constituents from precipitates produced in (A.-G. F. ANILIN-FABR.), (P.), B., 153.
 preparation of solutions of (HUMBOLDT and PACIFIC LUMBER CO.), (P.), B., 122; (MASCHINENBAU-ANSTALT HUMBOLDT), (P.), B., 268.
 filters for (LUNGE and COURTAULDS), (P.), B., 400.
 composition of (KITA, TOMIHISA, and IWASAKI), B., 45.
 properties of (KITA, TOMIHISA, and ICHIKAWA), B., 45.
 viscosity of solutions of (HERZOG, GAEBEL, and JANCKE), A., 902.
 maturing of (BERNHARDT), B., 187.
 ripening of (D'ANS and JÄGER), B., 532, 738; (HERZOG), B., 660; (NUMA), B., 781.
 chemical mechanism of (HEUSER and SCHUSTER), B., 399; (LEUCHS), B., 435.
 conditions of preparation of alkali-cellulose for (NUMA), B., 9.
 manufacture of artificial products from (BRITISH ENKA ARTIFICIAL SILK CO. and N.V. NEDERLANDSCHE KUNSTZIJDE-FABR.), (P.), B., 871; (WANT, BOUMAN, and N.V. NEDERLANDSCHE KUNSTZIJDE-FABR.), (P.), B., 913*.
 manufacture of fibres, tape, etc., from (KÄMPF), (P.), B., 401.
 manufacture of threads, films, etc., from (N.V. NEDERLANDSCHE KUNSTZIJDE-FABR.; VOSS), (P.), B., 268; (HAWLIK), (P.), B., 314; (MENDEL), (P.), B., 436.
 manufacture of hollow threads and bands from (COURTAULDS, LTD., NAPPER and GARDNER; COURTAULDS, LTD., HEGAN, and BAYLEY), (P.), B., 739.
 manufacture of threads and filaments from (COURTAULDS, LTD., HEGAN, and BAYLEY), (P.), B., 1008.
 determination of carbon disulphide and hydrogen sulphide in gases from decomposition of (HEGEL), B., 399.
- Viscosimeters (STONE and BOSWALL), (P.), B., 2.
 for oils (v. DALLWITZ-WEGNER), B., 940.
 for measurement of the viscosity of rubber latex (DITMAR), B., 682.
 air bubble (BARR), A., 343.
 new (DUCLAUX and ERRERA), A., 343.
- Viscosimetry (STAUF), A., 142.
- Viscosity, theory of (REINER), A., 678.
 kinetic theory of (DUNN), A., 1198.
 measurement of, at high temperatures (MERCER), B., 653.
 by Mohr's balance (STICH), A., 41.
 empirical formula for (KUNITZ), A., 1005.
 dependence of, on temperature in supercooled liquids (TAMMANN and HESSE), A., 1198.
 temperatures of equal (FAUST), A., 343.
 influence of, on specific rotation (P. and J. ACHALME), A., 778.
 in relation to density (DUBIER), A., 464.
 and surface tension of liquids (SHARMA), A., 464.
 of colloids in presence of electrolytes (DHAR), A., 123.
 of colloidal solutions (McBAIN), A., 351; (SEN; OSTWALD and AUERBACH), A., 470.
 of gaseous mixtures (TRAUTZ and NARATH), A., 671.
 of liquids (SATO), A., 234; (DUCLAUX and ERRERA), A., 895.
 and vapour pressure of binary mixed liquids (YAJNIK, BHALLA, TALWAR, and SOOFI), A., 235.
 of binary mixtures of isofluid liquids (UNKOVSKAJA and VOLOVA), A., 571.
 of mastic sols, in presence of potassium chloride (CHAKRAVARTI and DHAR), A., 677.
 of oils, increase in (ZOLLINGER), (P.), B., 21.
 of solutions in ethyl and methyl alcohols (GOLDSCHMIDT and AARFLOT), A., 1005.
 of aqueous solutions of strong electrolytes (SUGDEN), A., 244.
 of aqueous solutions of organic compounds (CHADWELL), A., 1006.

- Viscosity** of suspensions of rigid particles (HATSCHEK and JANE), A., 1097.
turbulence (CAMICHEL, ESCANDE, and RICAUD), A., 571.
Viscum album, fatty acids and resins from berries of (BRAUNHAUSER), A., 983.
- Vitamins** (DUTCHER, CREIGHTON, and ROTHROCK), A., 437;
(v. EULER and LINDSTAL), A., 871; (DUTCHER and KRUGER), A., 1065; (v. EULER and RYDBOM), A., 1180; (DRUMMOND), B., 296*.
synthesis of, by yeast (ZAJDEL and FUNK), A., 207.
inter-relation of effects of (v. EULER and WIDELL), A., 871.
action of, and surface activity (v. HAHN), A., 760.
in bone marrow and blood (v. EULER and STEFFENBURG), A., 326.
in cod liver oils (HOLMES and PIGOTT), B., 285.
effect of chemical preservation on content of, in eggs (Tso), B., 338.
in foodstuffs (EDDY), B., 718.
in canned foods (EDDY, KOHMAN, and CARLSSON), B., 213;
(KOHMAN, EDDY, CARLSSON, and HALLIDAY), B., 382.
in heat-sterilised foods (DUGDALE and MUNRO), B., 718.
malt preparations containing (Soc. CHEM. IND. IN BASLE), (P.), B., 297.
in human milk (MEYER and NASSAU), A., 1064.
content of, in plant juices (SUCHARIPA), B., 339.
antineuritic (JANSEN and DONATH), A., 644.
antiscorbutic, action of reducing agents on (DAUBNEY and ZILVA), A., 871.
fat-soluble (STEENBOCK, HART, HOPPERT, and BLACK), A., 437.
biological assay of (CHICK), A., 436.
water-soluble growth-promoting (HAUGE and CARRICK), A., 1065.
molybdophosphotungstic acid reagent for (BEZSSONOFF), A., 722.
- Vitamin-A**, chemical nature of (DRUMMOND, CHANNON, and COWARD), A., 206.
photoactivation of, by ultra-violet light (HAMANO), A., 98.
storage of (SHERMAN and CAMMACK), A., 760.
inactivation of, by rancid fat (POWICK), B., 382.
in relation to metabolism (NELSON and MCCAY), A., 1065.
influence of, on absorption of foreign fats (NAKAHARA), A., 760.
influence of, on fat and cholesterol metabolism (LIANG and WACKER), A., 207.
effect of deficiency of, on nitrogen metabolism (MORGAN and OSBURN), A., 436.
in flesh and fat of poultry (HOAGLAND and LEE), B., 846.
in meat (HOAGLAND and SNIDER), A., 206.
in milk, destruction of, by ultra-violet light (TITUS, HUGHES, HINSHAW, and FITCH), B., 846.
addition of, to oils (AARHUS OLIEFABR. and HANSEN), (P.), B., 140.
in oleo-oil and oleo-stearin (HOAGLAND and SNIDER), B., 509.
colour reactions of (CARR and PRICE), A., 870; (COCKING and PRICE), B., 800.
detection of (DRUMMOND, COWARD, and HANDY), A., 207.
detection of, colorimetrically (FEARON), A., 207; (v. EULER, MYRBÄCK, and KARLSSON; ROSENHEIM and WEBSTER), A., 1181.
determination of, by Fearon's test (WILLMOT and MOORE), A., 980.
- Vitamin-B** (LEVENE and VAN DER HOEVEN), A., 98.
study of (SMITH, COWGILL, and GROLL), A., 207.
concentration of (LEVENE and VAN DER HOEVEN), A., 1279.
solubility of, in benzene (WILLIAMS and WATERMAN), A., 980.
Japanese research on (SUZUKI), A., 980.
in lemon rind (WILLMOTT), A., 437.
from yeast (SEIDELL), A., 644; (LEVENE and VAN DER HOEVEN), A., 760; (RANDOIN and LECOQ), A., 871.
by-product yeast as source of (HERBURN), B., 105.
in relation to metabolism (PLIMMER and ROSEDALE), A., 326.
use of rats and pigeons in testing of (SEIDELL), A., 1181.
in diet of lactating rats (HARTWELL), A., 207.
- Vitamin-B and -D**, adsorption of, by colloidal ferric hydroxide (ZAJDEL and FUNK), A., 437.
- Vitamin-C** in grass (BROUWER), B., 213.
in dried orange juice (HUMPHREY), A., 1065.
effect of fermentation on content of, in tomato juice (LEPKOVSKY, HART, HASTINGS, and FRAZIER), B., 105.
cholesterol in organs in deficiency of (MOURIQUAND and LEULIER), A., 1181.
- Vitamin-C** in nutrition of chickens (HART, STEENBOCK, LEPKOVSKY, and HALPIN), A., 437.
detection of, colorimetrically (LOEWY), A., 871.
- Vitamin-D**, action of *n*-butyl nitrite on (BILLS), A., 437.
relation of, to peroxidation (YODER), A., 1279.
stability of, in cod-liver oil (HART, STEENBOCK, and LEPKOVSKY), B., 74.
detection of (v. EULER, MYRBÄCK, and KARLSSON), A., 1181.
- Vitamin-E**, existence of (ANDEREGG and NELSON), B., 643.
in hydrogenated vegetable oil (KENNEDY and PALMER), A., 645.
- Volatile compounds**, recovery of, from reaction mixtures (CHEM. FABR. GRIESHEIM-ELEKTRON), (P.), B., 177.
removal of, from materials (LAMY-TORRILLION), (P.), B., 99.
- Volatilisation** of solids, apparatus for (KRÖGER), A., 41.
- Volatility** of organic compounds (HERBST), A., 1087.
- Volta effect** (BEDREAG), A., 447.
- Voltolactice**, a rubber substitute (HOCK), B., 503.
- Volume**, changes of, on dissolution (DREYER), A., 897.
contraction of, in formation of aromatic compounds at absolute zero (HERZ), A., 778.
change of, in formation of bases and acids (SASLAVSKY), A., 661.
at absolute zero, relation between, and other properties (HERZ), A., 786.
atomic, relation between atomic number and (DEL FRESNO), A., 555, 1195.
atomic and molecular (BILTZ and SPECHT), A., 110; (BIRK and BILTZ), A., 110, 661.
critical. See Critical volume.
molecular, and molecular refraction (HERZ), A., 110.
of crystalline inorganic compounds (MOLES), A., 778.
of volatile inorganic compounds (RABINOVITSCH), A., 226; (SCHWAB), A., 661.
- Volumes**, relative, of the elements (COLLINS), A., 993.
- Volutin** in yeast cells (GLAUBITZ), B., 25.
- Vortex phenomena**, apparatus for study of (KÖNIG), A., 1097.
- Vulcanisation**. See under Rubber.
- Vulcanised material** (HENDERSON), (P.), B., 761.
- Vulcanite**, production of (TECH. CHEMIEKALIEN Co.), (P.), B., 23.
effect of accelerated ageing on physical properties of (DIETERICH and GRAY), B., 503.
rate of combination of sulphur with rubber in (GLANCY, WRIGHT, and OON), B., 204.
- Vulpinic acid**, configuration and derivatives of, and *pp'*-dichloro- and its derivatives (KARRER, GEHRCKENS, and HEUSS), A., 725.

W.

- Wagner reaction**, modification of, by liquid air cooling (MAAN), A., 594.
- Walden inversion** (WARD), A., 805.
effect of structure on (HÜCKEL), A., 1024.
- Walnut**. See *Juglans regia*.
- Walls**, materials for coating (KUNZE), (P.), B., 981.
coverings for (HEYL), (P.), B., 1016.
fibre and cement composition for use for (MELANDRI, and SPUN CONCRETE CONSTRUCTION Co.), (P.); B., 1016.
- Wash-bottle**, non-spattering continuous-stream (BENT and HUNT), A., 933.
- Washers**, combined dryers and, of centrifugal type (EDDY and CAMPBELL), (P.), B., 33.
- Washing agents**, production of (CHEM. WERKE HERKULES G.M.B.H. and SCHOLZ), (P.), B., 888.
- Washing apparatus** for granular material (GREAVES), (P.), B., 145*.
- Washing soda**. See Sodium carbonate.
- Waste**, use of chlorine in disposal of (BAKER), B., 389.
household and street, treatment of (GERSON), (P.), B., 390.
street, treatment of (GERSON), (P.), B., 726*.
See also Packing-house waste, Refuse and Trade wastes.
- Water**, catalytic synthesis of, in contact with nickel (BENTON and EMMETT), A., 482.
infra-red absorption spectrum of (COLLINS), A., 108; (SLEATOR and PHELPS), A., 222.
absorption of penetrating rays in (MYSSOVSKI and TUWIM), A., 221.
luminescence of, exposed to γ -rays (MALLET), A., 885.
as an optical sensitiser (KÖGEL and STEIGMANN), B., 772.

Water, hydrogen-ion concentration of (KLING and LASSIEUR), A., 355.
 and corrosion of iron (BAYLIS), B., 95, 493.
 electric charge on small particles of (ALTY), A., 1096.
 ionic activity of, in glycerol-water mixtures (COLVIN), A., 245.
 electrolysis of (KELLY), (P.), B., 592.
 packing for electrolytic apparatus for decomposition of (PECH-KRANZ), (P.), B., 793.
 transport numbers of, in solutions of alkali chlorides (VELÍŠEK), A., 687.
 molecular volume of, in crystalline hydrates (MOLES), A., 336.
 dissociation of molecules of (SENFLEBEN and REHREN), A., 768.
 vapour, temperature of, from boiling aqueous solutions (REISS-MANN and SCHREBER), A., 21; (BLOOK), A., 474.
 evacuation of carbon dioxide and (CAMPBELL), A., 570.
 superheated, flow of, through a nozzle (WALKER), A., 15.
 adsorption of, on quartz and on platinum (LENIER), A., 898.
 adsorption and capillary condensation of (BRAY and DRAPER), A., 674.
 polymerisation of (CHADWELL), A., 1006.
 surface activity of (REHBINDER), A., 674.
 surface tension of, variation of, with time (SCHMIDT and STEYER), A., 670.
 displacement of the equilibrium of (BANCROFT), A., 1100.
 apparatus for measurement of turbidity and colour of (OLSZEWSKI), B., 998.
 formation of films on (ADAM and JESSOP), A., 348.
 influence of surface films on evaporation of (RIDEAL), A., 119.
 spreading of dyes on (FRUMKIN), A., 674.
 films on salt solutions, structure of (HARKINS and GILBERT), A., 468.
 volumes of gas bubbles at the surface of (ALTY), A., 239.
 apparatus for distillation of, with exhaust steam (DAY), (P.), B., 78.
 purification of (THRESH and BEALE), B., 468; (AVERY), (P.), B., 614*; (STREETER), B., 966.
 use of aluminium hydroxide sols in (JOHNSTON and DOWNEY), B., 723.
 coagulation in (DELAORTE), B., 468.
 sodium aluminate as coagulant in (BROWNSTEAD; EDWARDS), B., 342.
 supervision of filtration plant for (EGGER), B., 774.
 at East Liverpool, Ohio (RUFF), B., 342.
 plant at Toronto, Ohio (RUFF), B., 342.
 purification and bacteriology, applications of concentration of hydrogen-ions in (TAYLOR), B., 469*.
 aeration of, under open-air conditions (ADENEY), B., 934, 1030*.
 clarification of, iron compounds in (MILLER), B., 29.
 coloured (MILLER), B., 29.
 filtration of, colloid chemistry in (DELAORTE and MANUEL), B., 723.
 in connexion with goitre (DON), B., 517.
 sand filtration of (BLAISDELL), B., 254; (DICE), B., 966.
 filters for (PATERSON), (P.), B., 254*; (BRAMWELL), B., 726.
 chlorination of (COX), B., 774; (ORNSTEIN), B., 854.
 sterilisation of (SIEMENS & HALSKE and ERLWEIN), (P.), B., 470.
 by chlorine (SCHWARZBACH), B., 469.
 by chlorine and its compounds (HAROLD), B., 78.
 softening of (SCHMIDT), (P.), B., 302, 726*; (GRANT; TELLIER and PERMUTIT Co.), (P.), B., 518; (NEWMAN and SCAIFE & SONS Co.), (P.), B., 614.
 graphical chemistry in (MCNAMEE), B., 724.
 control of (MCNEIL and COCHRANE CORP.), (P.), B., 726.
 treatment of aluminosilicates for use in (H. & H. REINBOLD), (P.), B., 254.
 with soap and soda (ROBBINS, MACMILLAN, and BOSART), B., 222.
 by base-exchange materials (SWEENEY and WARD-LOVE PUMP CORP.), (P.), B., 110; (FRÉCHOU), (P.), B., 390.
 manufacture of base-exchange materials for (FRÉCHOU), (P.), B., 390; (PERMUTIT A.-G.), (P.), B., 470, 614; (SWEENEY), (P.), B., 518*.
 preparation and comparative performance of base-exchanging materials for (HIGGINS and O'CALLAGHAN), B., 389.

Water, softening of, by zeolites (BEECH), B., 468.
 washing of regenerated zeolite material used for (NORDELL), (P.), B., 390.
 by zeolite-like substances (HIGGINS), (P.), B., 422.
 apparatus for (UNITED WATER SOFTENERS, LTD. and JONES), (P.), B., 1030.
 at Newark, Ohio (KAISER), B., 342.
 removal of, from other liquids (LOZAI), (P.), B., 525.
 separation of oil from (GREEN, OGDEN, and UNTHANK), (P.), B., 113.
 removal of dissolved oxygen from (SCHULEK), B., 388.
 indicator of flow of, through pressure filters (STEWART), (P.), B., 614*.
 oxidisability of, and determination of the "chlorine number" (KEISER), B., 222.
 electrolysis of metals in (SAXON), A., 365.
 action of, on lead and copper pipes (THRESH and BEALE), B., 468.
 differentiation of *Bacillus coli aerogenes* in examination of (HINMAN), B., 78.
Water, ammoniacal, corrosive action of (TILGNER), B., 143.
 boiler, conditioning of (HALL), B., 301.
 boiler-feed, production of, by distillation (INTERNAT. GEN. ELECTRIC Co. and ALGEM. ELEKTRICITÄTS-GES.), (P.), B., 518*.
 modern specifications for (SPLITTERGERBER), B., 999.
 purification of (GÜNTHER), (P.), B., 614.
 preheating and deaeration of (HÜLSMEYER), (P.), B., 302*; (COCHRANE CORP. and GIBSON), (P.), B., 854.
 deaeration of (ELLIOTT), (P.), B., 302*.
 heating and supply of (NECKAR WATERREINIGER MAATS. and HERINGA), (P.), B., 518.
 removal of gases from (GRISCOM-RUSSELL Co. and JONES), (P.), B., 614*.
 brewing, decarbonation of (WINDISCH), B., 602.
 chlorinated, in canning and preserving processes (SERGER), B., 564.
 iodoform taste of (ADAMS), B., 389.
 distilled, carbon dioxide content of, and its determination (KOLTHOFF), A., 1018, 1116.
 distilled and neutral, hydrogen-ion concentration of (KOLTHOFF), A., 139, 354.
 pure neutral distilled (BORDAS and TOUPLAIN), A., 588.
 influent, turbidity of (SCOTT), B., 723.
 polluted, rate of deoxygenation of (THERIAULT), B., 724.
 sewage-polluted, rate of atmospheric re-aeration of (STREETER), B., 725.
 pure and alkaline, air in (PORTER), B., 301.
 "red" (BAYLIS), B., 694.
 cause and correction of (SAVILLE), B., 724.
 surface, significance of bacteriophage in (ARNOLD), B., 469.
 reaction of o-tolidine with (FORSBERG), B., 723.
 waste, purification of (NEWLANDS), B., 110.
 filtration of (GEIGER), (P.), B., 614*.
 clarification and decolorisation of (ULLMANN), (P.), B., 614*.
 from dyeworks, clarification and decolorisation of (ULLMANN), (P.), B., 470.
NATURAL WATER :—
 Lake water, ammonia and nitrate content of (DOMOGALLA, FRED, and PETERSON), B., 613.
 of the Dead Sea, search for eka-caesium and eka-iodine in (FRIEND), A., 708.
 Potable or drinking water, control of aluminium sulphate for purification of (EGGER), B., 422.
 detection and determination of free chlorine in (KOLTHOFF), B., 517.
 determination of iodine in (STEFFENS), B., 902.
 River water, anti-microbial properties of (ARLOING, SEMPE, and CHAVANNE), B., 724.
 of Flambeau River, pollution of (WISCONSIN RAILROAD COMMISSION), B., 725.
 Sea water, elimination of sodium chloride from ice of (WHITMAN), A., 358.
 variation of salts in, with depth (HARVEY), A., 42.
 precipitation of calcium and magnesium from (IRVING), A., 1021.
 phosphate content of, in relation to growth of plankton (ATKINS), A., 1021.

NATURAL WATER:—

- Sea water, potassium salts from (NICCOLI), (P.), B., 237.
 deterioration of timber structures in (BARGER), B., 879.
 apparatus for preservation of, for biological purposes (KUNSTLER), (P.), B., 966.
 anti-microbial properties of (ARLOING, SEMPE, and CHAVANNE), B., 724.
 detection and determination of strontium in (DESOREZ and MEUNIER), A., 1222.
 determination of carbon dioxide in (GAARDER), A., 1221.
 Spring and mineral waters containing carbon dioxide, activation of enzymes by (LOEPER and MOUGEOT; MOUGEOT and AUBERTOT), A., 201.
 removal of hydrogen sulphide from (DESOREZ, LESCŒUR, and MANJEAN), A., 1113.
 stabilisation of iron in (GERARD), (P.), B., 383.
 of Bagni di Roselle (NASINI, PORLEZZA, and DONATI), A., 595.
 of Nasavusavu, Fiji (WRIGHT), A., 708.
 determination of sodium in (BARTHE and DUFILHO), B., 644.
- Water analysis:—
 detection of free chlorine in, by the *o*-tolidine and starch iodide tests (BUSWELL and BORUFF), B., 174.
 detection of *Bacillus coli* in (DUNHAM, McCRAIDY, and JORDAN), B., 302.
 determination of, in cereals (TAUSZ and RUMM), B., 338.
 determination of, in fibrous materials (SCHWALBE), B., 9.
 determination of, in foodstuffs and fats (KREIS), B., 338.
 determination of, in hydrocarbon oils, shales, and lignites (WOOD and NEALE), B., 36.
 determination of, in mineral oils (REINER), B., 146.
 determination of, in sugar products (VYSKOCIL), B., 560.
 determination of, in wheat and flour (SNYDER and SULLIVAN), B., 381.
 determination of acidity or alkalinity of (TRÉNEL), (P.), B., 685*.
 determination of chlorine ions in (VAN URK), B., 174.
 determination of permanent hardness of, by Pfeifer and Wartha's method (LUMSDEN-BEDINGFELD), B., 222.
 determination of concentration of hydrogen ions in (TRÉNEL), (P.), B., 208; (McCRAE), B., 613; (NASINI and PORLEZZA), B., 694.
 determination of iodine in (BRUBAKER, VAN BLARCOM, and WALKER), B., 630.
 determination of lime in (DUBOUX), B., 966.
 determination of nitrates in (BURKE), B., 389.
 determination of organic matter in, by means of potassium dichromate and sulphuric acid (ADENEY and DAWSON), B., 934.
 determination of the oxygen content of (RISCH), A., 140.
 determination of dissolved oxygen in, in presence of nitrite (STAS), B., 110.
 separation of small quantities of calcium from large amounts of magnesium in (NOLL), B., 221.
- Water baths, mixing apparatus for (LAMPE and RÖSSLER), A., 932.
 Water conduits consisting of pipes of two different metals, reduction of corrosion of (CASSEL), B., 95.
 Water filters. See under Filters.
 Water-gas. See under Gas.
 Water-glass. See Sodium silicate.
 Water mains, prevention of corrosion in (BAYLIS), B., 694.
 iron, corrosion of (HICKETHIER), B., 806.
 Water pipes, iron incrustation in (ELLIS), B., 142.
 Water supply, fifty years of (WESTON), B., 854.
 chlorophenol tastes in (CUNLIFFE), B., 301.
 Amsterdam dune, manganese in (WOLZOGEN-KÜHR), B., 724.
 Jersey, diatoms in (RUSHTON and AUBIN), B., 468.
 London, chemical and bacteriological examination of (HOUSTON), B., 934.
 of Manila, chlorination of (TAYLOR), B., 389.
- Waterproofing (KNORF), (P.), B., 627.
- Wax, bees', analytical data for (WEIR), B., 448.
 carnauba, myricyl alcohol from (GOTTFRIED and ULZER), B., 713.
 flax. See under Flax.
 paraffin. See Paraffin wax.
 mineral, extraction of, from lignite (MAILHE), (P.), B., 574.
 montan, purification of (SCHLICKUM-WERKE and KOEB), (P.), B., 184.
- Waxes, synthesis of (GRÜN, ULLBRICH, and KREZIL), A., 596; (GRÜN), B., 837.
 purification of (FORAY), (P.), B., 594.

- Waxes, extraction apparatus for (MACGREGOR and SCOTT & Co.), (P.), B., 923.
 hydrolysis of (SCHRAUTH), (P.), B., 287.
 oxidation of (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 987.
 decomposition of (SCHRAUTH), (P.), B., 449*.
 from different kinds of cotton (LECOMBER and ROBERT), B., 150.
 analysis of (ROUSSEAU), B., 135.
 Wax-colours, binding medium for (LORENZ), (P.), B., 22.
- Weighing by hydrostatic compensation (GUICHARD), A., 1021.
- Weight in air and in vacua (RÜER and KUSCHMANN), A., 1089.
- Weights, molecular, determination of, by X-ray methods (HERZOG), A., 665.
 by centrifuging (SVEDBERG), A., 677.
 by the cryoscopic method (FROMM and FRIEDRICH), A., 906.
 in mixed solvents (WAGNER), A., 350.
 in liquid ammonia (REHLEN and NESTLE), A., 783.
 in trinitrotoluene (PASTAK), A., 349.
 apparatus for (RIOHE), A., 1118.
 relation of, to critical data (SCHUSTER), A., 565.
 temperature variation of (JOUNIAUX), A., 461.
 in relation to density of metals (JOUNIAUX), A., 116.
 determination of, of aliphatic acids (TRAUTZ and MOSCHEL), A., 997.
 high, empirical formula of substances of (DISCHENDORFER), A., 749.
- Welding, arc, device for (COATS), A., 931.
 in hydrogen and other gases (ALEXANDER), B., 550.
 with atomic hydrogen (BRITISH THOMSON-HOUSTON Co. and PALMER), (P.), B., 368; (WEIMAN and LANGMUIR), B., 550.
 coated electrodes for (HUME STEEL, LTD. and HUME; LLOYD, HILL, and WHITECROSS Co.; QUASI-ARO Co. and STROHM-MENGER), (P.), B., 984.
- Wetting and capillarity (SCHULTZE), A., 1094.
- Wetting out agents for textiles (AUERBACH), B., 705; (KIND and AUERBACH), B., 974.
- Whale blubber and flesh, extraction of oil and glue water from (HOLTER and THUNE), (P.), B., 448.
- Whale oil, sperm, aliphatic alcohols from (ANDRÉ and FRANÇOIS), B., 987.
 detection of (TSUJIMOTO), B., 986.
- Wheat, composition, size and weight of grains of (BEROZELLER and WASTL), B., 992.
 conditioning of (REMINGTON), B., 563.
 varying characteristics of types of, grown in identical environment (HERMAN), B., 1026.
 nutritive value of (OLSON and ST. JOHN), A., 197.
 nutritive value of layers of kernels of (KLEIN, HARROW, PINE, and FUNK), A., 762.
 effect of mixed salt solutions on growth of roots of (S. F. and H. M. TRELEASE), A., 1066.
 translocation of food materials in seedlings of (YOCUM), A., 438.
 copper dissolved by, on treatment with basic copper carbonate (HALL), B., 993.
 action of copper compounds on "stinking smut" of (BODNÁR and TERÉNYI), B., 26.
 effect of admixture of fenugreek seeds with, on flour (FLEURENT), B., 418.
 action of mercury compounds on rust spores of (BODNÁR and TERÉNYI), A., 441.
 effect of nitrate nitrogen on protein content and yield of (BURKE), B., 601.
 effect of potassium chlorate on germination of (STROBEL and SCHARER), A., 1066.
 English, digestibility of (HALNAN), B., 896.
 winter, seasonal changes in, with regard to frost resistance (NEWTON and BROWN), B., 991.
 detection of proteins in (WHITCOMB and LEWIS), B., 1026.
 determination of moisture in (SNYDER and SULLIVAN), B., 381.
- Wheat bran, nutritive properties of proteins of (MURPHY and JONES), A., 974.
- Wheat flour, steeped, growth of mould fungi on (MORRIS), B., 187.
 New Zealand (DEARSLEY), B., 73.
- Wheat gliadin, preparation of (BLISH and SANDSTEDT), B., 894.
- Wheat gluten, colloid chemistry of (KUHN and RICHTER), B., 845.
- Wheat grain and straw, correlation between yields of (MAC-KENZIE), B., 506.
- Wheat oil, lactation-promoting factor in (SURE), A., 981.

- Whey**, recovery of lactose from (ELEKTRO-OSMOSE A.-G.), (P.), B., 419; (DUNHAM and ROSEMARY CREAMERY Co.), (P.), B., 461.
 separation of proteins and other matter from (BELL), (P.), B., 1027.
 determination of acidity of, colorimetrically (HOLWERDA), B., 212.
Whisky, determination of colour in (WILLIAMS), B., 845.
 pot still (HASTIE), B., 604.
White lead, treatment of, for use in paints (LERBERGHE), (P.), B., 680.
Whiteware glazes, variation of the "cone" squatting point of, with change of chemical composition (ZSCHIMMER and LEONHARDT), B., 878.
Whooping cough, changes in blood in (REGAN and TOLSTOUHOV), A., 538, 971.
Wines, tannins for use in manufacture of (LEVALLOIS), B., 380.
 effect of sun on composition of (HUGUES), B., 380.
 mellowness of, in relation to pectins of grapes (SEMICHON and FLANZY), B., 844.
 clarification of, with mercuric salts (SEMICHON and FLANZY), B., 562.
 impurities in (VILAR), B., 508.
 volatile acidity of (LAGNEAU), B., 503.
 oxidisability of iron in (WOLFF and GRANDCHAMP), B., 104.
 abnormal (FONZES-DIAON), B., 104.
 fruit, production of (HAMBURG), (P.), B., 509.
 detection of artificial colouring matters in (KICKTON and MAYER), B., 562.
 determination of citric acid in (REICHARD), B., 687.
 determination of lactic acid in (BONIFAZI), B., 603.
 determination of tartaric acid in (DUBOUX), B., 966.
 determination of added water in (GRAU), B., 765.
Winters colorata. See *Pepper plant*.
Wires, thin, manufacture of (N.V. PHILIPS GLOEILAMPENFABR.), (P.), B., 245.
 Wollaston, production of (SUHRMANN and CLUSIUS), A., 264.
Wire screens, British standard table of (ELLINGTON), B., 903.
Wodanite (FREUDENBERG), A., 380.
Women, blood of. See *under Blood*.
 Australian, milk of (WARDLAW and DART), A., 1269.
Wood, chemistry of (RITTER and FLECK), B., 660.
 water content and conductivity of (HASSELBLATT), B., 747.
 improvement of (KOBÉ and TEXAS GULF SULPHUR Co.), (P.), B., 981.
 alcoholysis of (HOLMBERG and RUNIUS), B., 267.
 carbonisation of (STRACHE and POLCICH), (P.), B., 732; (GARROW), (P.), B., 733*; (FAUQUE), B., 970.
 removal of tar from (BARBER), (P.), B., 908*.
 digestion of, by Ungerer's system (JENKE), B., 9.
 distillation of (FRAME), (P.), B., 119; (CHAPELLE), (P.), B., 182.
 fifty years of (HAWLEY), B., 812.
 low-temperature (MATTHAEI), (P.), B., 861.
 in presence of hydrogen under pressure and catalysts (FIERZ-DAVID and HANNIG), B., 35.
 nomenclature of distillation products of (BUGGE), B., 809.
 destructive distillation of (SHAW; WEAVER), (P.), B., 5;
 (MORGAN and THERMAL INDUSTRIAL & CHEMICAL RESEARCH Co., LTD.), (P.), B., 655*.
 coloration of (RENNER and FOREST PRODS. RESEARCH CORP.), (P.), B., 241; (BADISCHE ANILIN- & SODA-FABR.), (P.), B., 587.
 prevention of, from discoloration (GRAU), (P.), B., 949.
 prevention of sap staining and molding on (BATEMAN and HUBERT), (P.), B., 981.
 structures, deterioration of, in sea water (BARGER), B., 879.
 preservation of (JAMES and BYRNE), (P.), B., 56; (SCHANTZ), B., 158; (HENDERSON and ROSENSTEIN), (P.), B., 193;
 (RASCHIG), (P.), B., 241; (ALEXANDERSON), (P.), B., 632;
 (HOWALD and GRASSELLI CHEMICAL Co.), (P.), B., 633*;
 (HÖNTSCH & Co.), (P.), B., 880.
 by means of phenoxides from shale oil (WEIDERPASS and KOEGEMAN), B., 747.
 impregnation of (BLARINGHEM), (P.), B., 91; (HIMMELSBACH GEBR.), (P.), B., 363, 669; (ÉTABL. NOÉ & Co.), B., 364*;
 (PINTSCH), (P.), B., 441; (DITMAR), (P.), B., 489; (BUBLA), (P.), B., 918.
 by Cobra process (NOWOTNY), B., 408.
 product for (CHAMBIGE), (P.), B., 409*.
Wood, mercuric chloride for (FALCK and MICHAEL), B., 276.
 indurating of, with sulphur (KOBÉ), B., 668.
 treatment of (COOLIDGE), (P.), B., 709*.
 to prevent shrinkage (SPIRITUS-PRESSEHEFE & CHEM. FABR. HAMBURGER KUFFNER and MURMANN), (P.), B., 129.
 for manufacture of paper boards (BRÄUNLICH), (P.), B., 945.
 to protect from insects (MAXWELL-LEFROY and GRAESSER-MONSANTO CHEMICAL WORKS), (P.), B., 738.
 treated, painting of (DUNLAP), B., 948.
 protection of, against termites, etc. (TERMIT A./S.), (P.), B., 129.
 disintegration of, by low temperature explosion (MASON), (P.), B., 705.
 extraction of cellulose from (ATSUKI and MINAKI), B., 266.
 manufacture of oxalic acid from (FALCK), (P.), B., 385.
 apparatus for extraction of rosin and turpentine from (CLINE), (P.), B., 714.
 manufacture of pulp and other products from (BRADLEY and MCKEEFE), (P.), B., 533.
 manufacture of sugar from (PINK), (P.), B., 459.
 mechanical tests of adhesives for (ROYAL AIRCRAFT ESTABLISHMENT), B., 557.
 artificial, manufacture of light forms of (BROADWAY TRUST Co., LTD., BURNLEY, and TEMPLE), (P.), B., 669.
 from sawdust and cement (BURNLEY), (P.), B., 193*.
 deroesinified, comparative distillations of cellulose, lignin, and, under diminished pressure (FISCHER and TROPSCH), B., 859.
 resinous, recovery of by-products from (FISH), (P.), B., 596.
 spring and summer (RITTER and FLECK), B., 660.
 determination of lignin in (MÜLLER and HERRMANN), B., 435.
Wood aggregates, composition for mixing with (GARROW and NOVOCRETE Co. OF AMERICA), (P.), B., 489*.
Wood chips, digestion of (JAEGER), (P.), B., 356.
Wood pulp (OZAWA), B., 626.
 production of (STERNKOPF), (P.), B., 10*; (RICHTER and BROWN Co.), (P.), B., 1009.
 manufacture of (ULMEN, BECKER, and MANN; WALLACE and PINE WASTE PRODS.), (P.), B., 48; (RUE, WELLS, RAWLING, and STADTL), B., 945.
 control of (FLEURY), (P.), B., 48.
 production of acid sulphite liquor for (J. D. & G. D. JENSSEN), (P.), B., 483.
 treatment of waste liquors from (BEVERIDGE and BEVERIDGE; DREWSEN and W. VIRGINIA PULP & PAPER Co.), (P.), B., 49.
 treatment and pressing of (BRANDWOOD), (P.), B., 356.
 stones for grinding of (NORTON Co. and GREENWOOD), (P.), B., 153*.
 digestion of, by the sulphite process (HÄGGLUND), B., 911.
 digesters, treatment of blow-off vapours from (DECKER), (P.), B., 533.
 steel, prevention of corrosion in (RAWLING), (P.), B., 152.
 sulphite (ALSTYNE), (P.), B., 533.
 testing of, with the large-size Lampen ball mill (SIEBER), (P.), B., 86.
 soda, yield of, with reference to length of chip (CABLE, McKEE, and SIMMONS), B., 1007.
 sulphite, violet fluorescence of (GERNGROSS and TSOV), B., 911.
Wood sage. See *Salvia sclarea*.
Wood waste, distillation of (THERMAL INDUSTRIAL and CHEMICAL RESEARCH Co. and RIDER), (P.), B., 621.
Wooden apparatus for acid liquors, non-rusting connexions for (HACKEL), (P.), B., 177.
Wool, influence of sunlight on (v. BERGEN), B., 312.
 effect of ultra-violet light on (MEUNIER and REY), B., 974.
 density of, and its relation to swelling and sorption in water and other liquids (KING), B., 186.
 heat of wetting of (HEDGES), A., 1091.
 use of wetting out agents in carbonisation of (KRAIS), B., 870.
 washing of (DUHAMEL and COMP. GÉN. IND. TEXTILES), (P.), B., 122, 532, 912, 975, 1010.
 treatment of (AUDIBERT), (P.), B., 477.
 chlorination of (S. R. and E. R. TROTMAN), B., 480; (SCHWEITZER), (P.), B., 782.
 oxidation of oils used for lubrication of (RHYS-DAVIES), B., 530.
 degreasing of (BRUCKHOFF), (P.), B., 9; (N.V. ALGEM. CHEM. PRODUKTENHANDEL and MEYER), (P.), B., 912.
 bleaching of. See *under Bleaching*.

(*o*-Xylene, *Me:Me* = 1:2; *m*-xylene, *Me:Me* = 1:3; *p*-xylene, *Me:Me* = 1:4).

- Wool, mordanting of (BEDFORD), (P.), B., 706.
 tests for fastness of dyes on (HIRST), B., 43.
 azo-dyes for (BRITISH DYESTUFF CORP., BADDILEY, HILL, and RILEY), (P.), B., 85.
 blue azo-dyes for (NEY and HAEBLER), (P.), B., 658.
 proteins of (TROTMAN, TROTMAN, and SUTTON), B., 150.
 sulphur content of (TROTMAN and BELL), B., 150; (BARRITT and KING), B., 870.
 protection of, from moth (NAEFE), (P.), B., 47; (FARB. v. BAYER & Co.), (P.), B., 49*.
 delaines, crêpe effects on (FAVRE; WOLF), B., 123.
 piece goods, even dyeing of (FAVRE; WAGNER), B., 122.
 printing of, with direct dyes (FAVRE; WAGNER), B., 122.
 determination of dry weight of (BARKER and HEDGES), B., 943.
 raw, determination of pure wool content of (SCHÜLKE), B., 737.
 determination of alkali in (HIRST and KING), B., 266.
 determination of sulphuric acid in (HIRST and KING), B., 266.
 Wool fat, purification of (FOWLER and EDSE), (P.), B., 759.
 sulphonated derivatives of (HERZOG), (P.), B., 287*.
 Wool fibres, gel structure of (SPEAKMAN), B., 943.
 extension of, under stress (SPEAKMAN), B., 943.
 Wool grease, bleaching of (LIFSCHÜTZ), B., 500.
 removal of free sulphur from (CHRISTISON, NUTTING, and ARLINGTON MILLS), (P.), B., 136.
 Woolen fabrics, felting process for (RICALES), (P.), B., 781.
 carbonising of (WILSON), B., 435.
 protection of, from moth (BLANCHE), (P.), B., 871.
 Worm seed oil, American, so-called Western (S. Dakota) (HOGSTAD), B., 565.
 Worts, buffer substances in (KOLBACH), B., 686.
 influence of brewing water on acidity of (WINDISCH and KOLBACH), B., 962.
 brewery, steam-boiling of (WILLEMART), B., 73.
 determination of colour of (MESTAN), B., 962.
 See also under Beer.
 Wulfenite from Morocco (COMUCCI), A., 595.
 Wurtz-Fischer synthesis (GOLDSCHMIDT and SCHÖU), A., 721.
 Wurtzite, crystal structure of (ULRICH and ZACHARIASEN), A., 664.

X.

- Xanthic acid, salts, manufacture of (BRITISH DYESTUFFS CORP., CRONSHAW, and NAUNTON), (P.), B., 665.
 alkali salts, manufacture of (CROWELL, BRECKENRIDGE, and WESTERN INDUSTRIES Co.), (P.), B., 13; (MISSBACH), (P.), B., 743.
 potassium salt, as soil fumigant (DE ONG), B., 207.
 cellulose ester, manufacture of (MORO), (P.), B., 401.
 cetyl ester (HERMANS), A., 819.
 Xanthic acids, potassium salts, reactions of alkaloids with (NAYARRO), A., 746.
 Xanthine, detection of (SCHWEIZER), A., 750.
 Xanthine oxydase (DIXON), A., 977; (KODAMA; DIXON and KODAMA), A., 1175.
 Xanthone, preparation of (SIMON), A., 842.
 reduction of (v. BRAUN and BAYER), A., 1253.
 Xanthone, 1-hydroxy-, diacetoborate (DIMROTH), A., 298.
 Xanthones, hydroxy-, preparation of (ATKINSON and HEILBRON), A., 1249.
 Xanthone-8-carboxylic acid, 5:6:7-trichloro-, salts (ORNDORFF and PARSONS), A., 290.
p-Xanthylphenylarsinic acid (HEWITT, KING, and MURCH), A., 851.
 Xenon, content of, in air (RABINOVITSCH), A., 808; (MOUREU and LEPAGE), A., 933.
 spectrum of (GEHRCKE and JANICKI), A., 1071.
 magnetic susceptibility of (CROW), A., 14.
 cathode fall in (GÜNTHER-SCHULZE), A., 3.
 Xenotime, analysis of (KIMURA), A., 144.
 β -Xenylhydroxylamine. See Diphenyl, *p*-hydroxylamino-
 Xylan, enzymic hydrolysis of (EISENSTEIN), A., 502.
 Xylene, purification of (KISHNER and VENDELSTEIN), A., 604.
 for use in catalytic reduction (ZETTSCHKE and ARND), A., 405;
 methylation of (SMITH and DOBROVOLNY), A., 719.
 nitration of (ORLOFF), A., 1130.

- Xylene, trinitro-, molecular compound of indole and (SKRAUP and EISEMANN), A., 999.
m-Xylene, fusion curves of mixtures of, with benzene, toluene and *p*-xylene (NAKATSUCHI), A., 682.
p-Xylene, equilibrium of sulphur and (HAMMICK and HOLT), A., 1102.
 fusion curves of mixtures of *m*-xylene and (NAKATSUCHI), A., 682.
m-Xylenedisulphonyl chloride (LUSTIG and KATSCHER), (P.), B., 964.
 Xylenesulphonic acids, hydrolysis of (KISHNER and VENDELSTEIN), A., 604.
 4-*o*-Xylenol acetate (v. AUWERS, BUNDESMANN, and WIENERS), A., 609.
s-m-Xylenol, *o*-chloroamino-, acetyl derivative (v. AUWERS and FRESSE), A., 530.
 3-*p*-Xylenol, 6-amino-, benzoyl derivative (v. AUWERS, BUNDESMANN, and WIENERS), A., 609.
 Xylenols, α -naphthylurethanes from (FRENCH and WIRTEL), A., 830.
 phenylurethanes of (STEINKOPF and HÖPNER), B., 624.
 Xylenoxyacetic acids (STEINKOPF and HÖPNER), B., 624.
 Xylidine, commercial, separation of the constituents of (MORGAN and HICKINBOTTOM), B., 656.
p-Xylidine chloroplatinate (CURTIUS and BERTHO), A., 509.
 Xylinodimethylbenzthiazoles, and their tetrabromides (HUNTER), A., 850.
 2-*m*-Xylidino-5-ethoxy-4:5-dihydrothiazole (NIMKAR and PYMAN), A., 183.
 Xylolith from sawdust and magnesia cement (GRÜN), B., 90.
p-Xyloquinone, action of, on yeast (NEUBERG and SIMON), A., 758.
 Xylose, fate of, in the body (CORLEY), A., 1271.
 2:4-dibromophenylhydrazone (VOROŠEK, ETTTEL, and KOPPOVA), A., 501.
 γ -Xylose, derivatives of (HAWORTH and WESTGARTH), A., 600.
n-4-Xylol allyl ether (CLAISEN and TIETZE), A., 1035.
 β -*m*-4-Xylolacetylene, and α -bromo- and α -iodo- (GRIGNARD and PERRICHON), A., 382.
N-o-Xylylene-*N'*-pentamethylene-*o*-xylylenediamine, and its salts (v. BRAUN, KÜHN, and GOLL), A., 1259.
 α -*m*-4-Xylolethylene, α -chloro- (GRIGNARD and PERRICHON), A., 382.
m-Xylol iodomethyl ketone, and its semicarbazone (GRIGNARD and PERRICHON), A., 382.
m-Xylolpropenenitrile, and its amide (GRIGNARD and PERRICHON), A., 382.
p-Xylol dithiocarbamic acid, ammonium salt (HANN), A., 309.

Y.

- Yarns, treatment of, with liquids (McCONNELL), (P.), B., 741.
 beams for winding (BRANDWOOD), (P.), B., 945.
 artificial, production of (SOC. FABR. SOIE RHODIASETA), (P.), B., 975.
 "Yatrenum," colour variations of, and its use as an indicator (VAN URK), A., 813.
 Yeast, preparation of, for use in food products (HOFFMAN, FREY, and FLEISCHMANN Co.), (P.), B., 417.
 manufacture of (SAK and FLEISCHMANN Co.), (P.), B., 140*;
 (DAHLBERG), (P.), B., 295, 459; (HOFFMAN, CREGOR, GRIGSBY, and FLEISCHMANN Co.), (P.), B., 337*;
 (WROTEN and LIBERTY YEAST CORP.), (P.), B., 604.
 by the aëration process (VER. MAUTNER'SCHE PRESSHEFE-FABR. and FOULD-SPRINGER), (P.), B., 643; (CLAASSEN), B., 686.
 from malted milk (HILL, GIVENS, and NORTHWESTERN YEAST Co.), (P.), B., 719.
 from molasses (DRESDENER PRESSHEFEN- & KORNSPIRITUS-FABR.), (P.), B., 211.
 and nutrient solutions (CORBY, GLASGOW, and FLEISCHMANN Co.), (P.), B., 337.
 production of lactic acid for (POLLAK), (P.), B., 73.
 comparative effects of pressing and draining of (FULLER and MORITZ), B., 459.
 action of drugs and irradiation on (ZELLER), A., 758, 867.

- Yeast**, development and nutrition of (TAIT and FLETCHER), B., 929.
 effect of temperature on growth of (SHERWOOD and FULMER), A., 867.
 cultivation of, with beet-sugar molasses (CLAASSEN), B., 718.
 in synthetic media (AUBEL, GENEVOIS, and SALARBARTAN), A., 641.
 growth of, in wort (LUDWIG), A., 434.
 reproduction of, without addition of bios (WHITEMAN), A., 324.
 variations in absorptive power of (EFFRONT), B., 380.
 formation of acetylmethylcarbinol and β -butylene glycol by (KLUYVER, DONKER, and VAN'T HOOFT), A., 203.
 amylase of (GOTTSCALK), A., 759.
 synthesis of coproporphyrin by (FISCHER and FINK), A., 324; (FISCHER), A., 544; (FISCHER and HILMER), A., 758; (SCHUMM), A., 1048.
 rich in coproporphyrin, enzymes and co-enzymes in (v. EULER, FINK, and NILSSON), A., 1176.
 dehydrogenases of (v. EULER and NILSSON), A., 323.
 insulin-like activity of the co-enzyme of (v. EULER, JORPES, and MYRBÄCK), A., 98.
 preparation of glycogen from (YOKOYAMA), A., 758.
 decomposition of haemin by (FISCHER and LINDNER), A., 634.
 invertase in (WILLSTÄTTER and LOWRY; WILLSTÄTTER, SCHNEIDER, and WENZEL), A., 321.
 action of, on lactic acid (HOFFERT), A., 642.
 nitrogenous constituents of (VICKERY), A., 978.
 fixation of atmospheric nitrogen by (FULMER and CHRISTENSEN), A., 96.
 assimilation of nitrogen by, from culture media (CLAASSEN), A., 641.
 hydrolysis of polysaccharides by (IWATSURU), A., 323.
 porphyratin from (SCHUMM), A., 758, 1277.
 proteases of (WILLSTÄTTER and GRASSMANN), A., 759.
 reductase in (v. EULER and NILSSON), A., 95, 544, 868.
 oxido-reductase of (LEBEDEV), A., 1276.
 sulphur-containing amino-acid from (ODAKE), A., 203.
 thio-sugar from (LEVENE and SOBOTKA), A., 52; (SUSUKI and MORI), A., 96.
 synthesis of vitamins by (ZAJDEL and FUNK), A., 207.
 water-soluble vitamin-B from (RANDOIN and LECOQ), A., 871.
 action of *p*-xyloquinone on (NEUBERG and SIMON), A., 758.
 fermentation by (NILSSON and SANDBERG), A., 978.
 acetaldehyde and acetylmethylcarbinol in (ELION), A., 758.
 influence of acetic and formic acids and their salts on (KATAGIRI), A., 642.
 action of ammonium salts on (ZELLER), A., 1061.
 action of nitrogen compounds on (ZELLER), A., 1177.
 influence of oxygen on (MEYERHOF), A., 95.
 effect of piperazines on (ABDERHALDEN), A., 544.
 effect of organic compounds on (SCHOELLER and GEHRKE), A., 978.
 effect of urine on (ZELLER), A., 1177.
 action of adrenaline on self-fermentation of (POPPER), A., 95.
 fermentation of galactose by (v. EULER and NILSSON; ABDERHALDEN), A., 544; (SÖNGEN and COOLHAAS), A., 1177.
 carbohydrate and fat metabolism of (MACLEAN and HOFFERT), A., 642.
 action of carbon monoxide on respiration of (WARBURG), A., 1277.
 preservation of (LINDEMANN and HODGE), (P.), B., 381.
 preparations (WILLSTÄTTER and SOBOTKA), (P.), B., 381; (STERN and BECKER), B., 382.
 manufacture of foodstuffs from (ENGEL), (P.), B., 297.
 in milk, protective action of, on lactic acid bacteria (SLOBODSKA-ZAYKOVSKA), A., 545.
 brewers', vitamin-B from (SEIDELL), A., 644.
 compressed, manufacture of (KUSSEROW), (P.), B., 563.
 dry (ULEX), B., 689.
 fermentation by (ABDERHALDEN), A., 543.
 fresh, stabilisation of (LINDEMANN and HODGE), (P.), B., 929.
 metal-containing, preparation of (BEHRINGSWERKE A.-G.), (P.), B., 852.
 oxygenated, sugar assimilation of (LIEBEN and LÁSZLO), A., 96.
 pressed, manufacture of (EFFRONT), (P.), B., 845.
 by-product, as source of vitamin-B (HEPBURN), B., 105.
 oxydase and haemochromogen reactions of (SCHUMM), A., 314.
 evaluation of, for distillery purposes (HASTIE), B., 844.
 determination of, gravimetrically (COOMBS and STEPHENSON), A., 1284.
- Yeast**, determination of phosphoric acid in, volumetrically (STAIGER), A., 212.
Yeast cells, action of ether on (KERR and YOUNG), A., 1277.
 influence of electrolytes on electrophoretic migration of (WINSLOW and FLEESON), A., 324.
 nitrogen equilibrium in (v. EULER and FINK), A., 1177.
 nitrogen equilibrium and invertase activity of (v. EULER, JOSEPHSON, and FINK), A., 758.
 volution in (GLAUBITZ), B., 25.
 dry, fermentation and growth in (v. EULER and BARTHEL), A., 1276.
Yeast industries (SCHWEIZER), B., 894.
 Yeast juice, formation of polysaccharides in (NAGANISHI), A., 977.
Yeast-phosphoprotein sols, adsorption of methylene-blue by (RIWLIN), A., 1092.
Yeast-nucleic acid, nitrogenous constituents of (LEVENE), A., 441.
 Yocca, new caffeine drug from (PERROT and ROUHIER), B., 644.
 Yoghurt bacteria. See under Bacteria.
 Yohimba alkaloids. See under Alkaloids.
 Yohimbene, and its hydrochloride (HAHN and BRANDENBERG), A., 1263.
 Yohimbenic acid (HAHN and BRANDENBERG), A., 1263.
 isoYohimbine (WARNAT), A., 1263.
 isoYohimboic acid, and its derivatives (WARNAT), A., 1263.
 Yttrium, preparation and properties of (THOMPSON, HOLTON, and KREMERS), A., 489.
 spectrum of (MEGGERS and KIESS), A., 651.
 Yttrium hydroxide as an adsorbent (KLEEBERG), A., 468.
 Yulocrotine (ANASTASI), A., 744.

Z.

- Zeeman effect** (BACK), A., 103, 767; (WILHELMY; SOMMER; HEISENBERG and JORDAN), A., 767.
 mechanical models of (DARWIN), A., 216.
 effect and multiplet structure (BRAMLEY), A., 216.
 in weak magnetic fields (SCHÜTZ), A., 1072.
 intermediate stages between the Paschen-Back effect and (MENSING), A., 1072.
 "Zelio" preparations, determination of thallium in (BODNÁR and TERÉNYI), B., 997.
 Zeolites, vapour pressure and basic exchange in (ROTHMUND), A., 908.
 Zeotokol. See Dolerite.
 Zibetone. See Civetone.
 Zinc, manufacture of (CORNELIUS and TROLLHÄTTANS ELEKTROTHERM. ARTIEBOLAG), (P.), B., 97*.
 electrothermic production of (THARALDSEN), (P.), B., 922*.
 electrolytic production of, from ores (FIELD, PETERSSON, HARRIS, and METALS EXTRACTION CORP.), (P.), B., 495.
 distillation of, in vertical retorts fired with lignite producer gas (ROTT), B., 194.
 condensation of vapours of (RAVNER and NOBSKE A./S. for ELEKTROKEM. IND.), (P.), B., 97.
 condenser for (GRINE and GRASSELLI CHEMICAL Co.), (P.), B., 134.
 recovery of, from ores (LEEMANS), (P.), B., 370.
 from fine ores (METALLBANK & METALLURGISCHE GES.), (P.), B., 412.
 from zinc-lead ores (SOC. GÉN. MÉTALLURGIQUE DE HOBOKEN), (P.), B., 675.
 from lead-zinc sulphide ores (LANGGUTH), (P.), B., 952.
 from burnt pyrites (SCHMIDT), (P.), B., 246.
 recovery of lead and, from ores (H. & P. FAIVRE), (P.), B., 330.
 extraction of, from zinciferous ores (METALLBANK & METALLURGISCHE GES.), (P.), B., 833*.
 treatment of ores or residues containing (SMITH), (P.), B., 97*.
 treatment of mixed sulphide ores of lead and (CHRISTENSEN), (P.), B., 330.
 pure, properties of (FREEMAN, SILLERS, and BRANDT), A., 997.
 spectrum of (FUKUDA), A., 651; (SMITH), A., 1071.
 fine structure in (WOOD), A., 986.
 effect of an electric field on (FUJIOKA), A., 986.
 with an electrodeless discharge (ROBERTSON), A., 550.
 arc spectrum of (SAWYER and BEESE), A., 103.
 vacuum arc emission spectrum of (FUKUDA, KUYAMA, and UCHIDA), A., 652.

- Zinc, X-ray spectrum of** (THORÆUS), A., 1186.
 vapour, spectrum of (PONOMAREV and TERENCE), A., 766.
 absorption spectrum of (FRAYNE and SMITH), A., 550.
 resonance spectrum of (WINANS), A., 102.
 atomic refraction of, in its dialkyl compounds (KRAUSE and FROMM), A., 718.
 thermo-electric properties of (GRÜNEISEN and GOENS), A., 784.
 electrical resistance of (MEISSNER), A., 1086.
 electro-deposition of, on anodes in voltaic cells (HUMBY and PERRIN), A., 689.
 from sulphate solutions (MARSHALL), B., 328*.
 from electrolytes containing gelatin and aluminium sulphate (FRÖLICH), B., 494.
 influence of gelatin on potential of, in zinc sulphate solution (RABALD), A., 804.
 acid plating baths for (THOMPSON), B., 950.
 electrolytic precipitation of copper by (GALECKI and ORLOVSKI; GALECKI and KUCZYŃSKI), A., 364; (GALECKI), A., 922.
 precipitation of nickel by, from alcoholic solutions (MÜLLER, SCHRINKE, and FARMAKIDES), A., 1016.
 treatment of materials coated with (CORNELL and WESTINGHOUSE ELECTRIC and MANUF. Co.), (P.), B., 133.
 enamelling of (PIERCE, HUMPHRIES, and UDYLLITE PROCESS Co.), (P.), B., 542.
 passivity of, in reduction of nitro-compounds (IZMAILSKI and KOLPENSKI), A., 248.
 allotropy of (STOCKDALE), A., 117.
 vapour pressure of (JENKINS), A., 233; (MAIER), A., 342.
 influence of metals and their salts on the solution of, in acids (CENTNERSZWER and STRAUMANIS), A., 131.
 solutions, purification of (CAMPBELL), (P.), B., 674.
 bromination of (RAYNAUD), A., 486.
 and its oxide and sulphide, effect of, on health of workmen (BATCHELOR, FEHNET, THOMSON, and DRINKER), B., 854.
 metabolism of. See Metabolism.
 commercial sheet, porosity and intensive corrosion of (EVANS), B., 365.
- Zinc alloys** (KARITZKY and NEWHALL), (P.), B., 63.
 with aluminium (TIEDEMANN), B., 160, 751.
 electrolysis of (KREMAN and DELLACHER), A., 802.
 eutectoid transformation in (ISHIHARA), B., 672.
 improvement of (GOLDSCHMIDT A.-G.), (P.), B., 885.
 with aluminium and copper, constitution of (HANSON and GAYLER), B., 328*.
 with cadmium (DEELEY), B., 328*.
 constitution and physical properties of (JENKINS), B., 831.
 with copper, segregation phenomena in (CLAUS), B., 750.
 β -transformation in (HAUGHTON and GRIFFITHS), B., 328*.
 containing 45–65% Cu, constitution of (GAYLER), B., 328*.
 rate of oxidation of, at high temperatures (DUNN), A., 692.
 with copper or silver, structure of (WESTGREN and PHRAGMÉN), A., 1084.
 with lead and silver (WILLIAMS), B., 93.
 with silver, electrical conductivity of (PETRENKO), A., 229.
 with tin, density of (SAUERWALD), A., 786.
- Zinc compounds, manufacture of** (WEMPLE; AMER. ZINC, LEAD, & SMELTING Co.), (P.), B., 755.
- Zinc salts in diet, effect of, on growth** (MCHARGUE), A., 972.
 effect of, on glycolysis in blood (VIVIANI), A., 1051.
- Zinc carbonate, crude, treatment of** (GIDDEN, RAGG, and CHANCE & HUNT), (P.), B., 440*.
 chloride, crystal structure of (BRUNI and FERRARI), A., 995.
 anhydrous, manufacture of (CHRISTENSEN), (P.), B., 708.
 compounds of oximes with (BILLON), A., 500.
 fluoride, crystal structure of (FERRARI), A., 664.
 hydride, structure and band spectrum of (MULLIKEN), A., 452.
 iodide, thermodynamics of (ISHIKAWA and SHIBATA), A., 1103.
 oxide, manufacture of (KIRK and KIRK SIMON SMELTING Co.), (P.), B., 126; (N.V. HANDELMMAATS. GRIKRO; UTLEY, McALLUM, and RIVER SMELTING & REFINING Co.), (P.), B., 360.
 direct production of, from sulphide ores (WARING), B., 95.
 crude, treatment of (GIDDEN, RAGG, and CHANCE & HUNT), (P.), B., 440*.
 free energy of formation of (MAIER, PARKS, and ANDERSON), A., 1210.
 as a photochemical sensitiser (PERRET), A., 366.
 equilibrium of carbon monoxide and (MAIER and RALSTON), A., 358.
- Zinc oxide, adsorption of ethylene and hydrogen by** (LAZIER and ADKINS), A., 467.
 adsorption of methylene blue by (BURNS and WOOD), B., 734.
 reduction of, by carbon (ZELLER and O'HARRA), B., 95.
 catalysts, decomposition of alcohols in contact with (ADKINS and LAZIER), A., 807.
 pigments. See under Pigments.
 determination of, in brass (EVANS and RICHARDS), B., 279, 792*.
 selenocyanate, ammonia compound of (BERGSTROM), A., 1114.
 sulphate, production of, from iron ores containing zinc sulphide (GEWERKSCHAFT SACHTLEBEN and PÜTZER), (P.), B., 52.
 behaviour of lead anodes in electrolysis of solutions of (HOOK and KLAUITTER), B., 17.
 crystalline, production of (AGDE), (P.), B., 915.
 purification of solutions of (AKTIEBOLAGET OSKARSHAMMS KOPPARVERK), (P.), B., 156; (ELDRIDGE), (P.), B., 320.
 equilibrium of potassium sulphate, water, and (CAVEN and JOHNSTON), A., 1210.
 sulphide, manufacture of (BREVER, FARBER, and NEW JERSEY ZINC Co.), (P.), B., 822.
 crystalline, manufacture of (DE HÉDOUVILLE and PIPEREAUT), (P.), B., 13.
 containing manganese, triboluminescence of (PERSCHKE), A., 455.
 sulphides, phosphorescent (GUNTZ), A., 558, 885, 993.
 vanadates (EPHRAIM and BECK), A., 371.
- Zinc organic compounds of azo-dyes** (SOC. CHEM. IND. IN BASLE), (P.), B., 576.
- Zinc mixed dialkyls** (KRAUSE and FROMM), A., 718.
- Zinc determination and separation:—**
 determination of (STREIBNOER and POLLAK), A., 492.
 determination of, as acetate (RAVENSWAAY), A., 1019.
 determination of, electrolytically, in ores (SULLIVAN and LUKENS), B., 16.
 separation of, from cadmium and from tin (LASSIEUR), A., 1013.
 separation of manganese and (RUFF and HIRSCH), A., 126.
- Zinc anodes.** See under Anodes.
- Zinc blende.** See Blende.
- Zinc electrodes.** See under Electrodes.
- Zinc ores, smelting of** (OGG), (P.), B., 369.
 desulphuration of (MELLERSH-JACKSON and SOC. ANON. DES MINES & FONDERIES DE ZINC DE LA VIEILLE-MONTAGNE), (P.), B., 711*.
 silicate, of primary origin (SPEAK), A., 380.
- Zinc retort residues, determination of silver in** (HASSREIDTER), B., 95.
- Zinc white, manufacture of** (LANCE), (P.), B., 288.
 treatment of, for use in paints (LERBERGHE), (P.), B., 680.
- Zircon, crystal structure of** (VEGARD), A., 663.
 analysis of (KIMURA), A., 144.
- Zircons, hafnium content and radioactivity of** (PIUTTI), A., 43.
- Zirconia.** See Zirconium dioxide.
- Zirconium, pure, preparation of** (DE BOER and FAST), A., 699.
 in pitchblende (FREE), A., 709.
 spectrum of (MEGGERS and KIESS), A., 651.
 thermionic emission of (ZWICKER), A., 1188.
 adsorption of hydrogen by (SIEVERTS and ROELL), A., 810.
 deposition of, upon incandescent electric lamp filaments (N.V. PHILIPS GLOEILAMPENFAB.), (P.), B., 886.
 addition of, to alloy steels (ELECTRO-METALLURGICAL Co.), (P.), B., 411.
- Zirconium alloys, manufacture of** (STIMSON and BORCHERS), (P.), B., 367.
 with tin (COOPER and KEMET LABORATORIES Co.), (P.), B., 133.
- Zirconium compounds, separation of, from hafnium compounds** (N.V. PHILIPS GLOEILAMPENFAB.), (P.), B., 273.
- Zirconium salts, reactions of, with sodium acetate, oxalate, and tartrate and with dextrose** (BRITTON), A., 586.
 effect of, on nutrition (RICHER, GARDNER, and GOODBODY), A., 197.
- Zirconium carbide, manufacture of** (HARTMANN and CARBORUNDUM Co.), (P.), B., 440.
 fluoride, analysis of (PRIDEAUX and ROPER), A., 587.
 ammonium fluoride, thermal dissociation of (HARTMANN), A., 1007.
 halides, separation of, from hafnium halides (N.V. PHILIPS GLOEILAMPENFAB.), (P.), B., 156.

Zirconium hydroxide, reaction of "aluminon" with (MIDDLETON), A., 930.
 dioxide (*zirconia*), pure, production of, from zirconia ores - (TABATA and MORIYASU), B., 1011.
 manufacture of (COOPER, BENSING, and KEMET LABS. Co.), (P.), B., 539.
 purification of (KINZIE and TITANIUM ALLOY MANUF. Co.), (P.), B., 89.
 luminescence of (WÖHLER), A., 335.
 specific heats of (HÜTTIG and WEHLING), A., 1103.
 equilibrium of carbon with (PRESCOTT), A., 1209.
 Zirconium organic compounds:—
 Zirconium fluorides with organic bases (WINDSOR), A., 369.
 Zirconium detection, determination, and separation:—
 detection of (PAVELKA), A., 1222.
 detection of, colorimetrically (DE BOER), A., 40.

Zirconium detection, determination, and separation:—
 determination of, with phenylarsinic acid (RIOE, FOOG, and JAMES), A., 593.
 separation of hafnium and (DE BOER), A., 373; (DROPHY and DAVEY; KENDALL and WEST), A., 1117; (N.V. PHILIPS GLOEILAMPENFABR., COSTER, and HEVESY), (P.), B., 12, 440*, 631*; (VAN ARKEL, DE BOER, and N.V. PHILIPS GLOEILAMPENFABR.), (P.), B., 745*.
 separation of, from titanium (SCHRÖDER), A., 705; (MOSER), A., 1019.
 Zirconium ores, purification of (Soc. D'ÉTUDE DES AGGLOMÉRÉS), (P.), B., 18.
 Zymase, action of (PARIS), A., 323.
 activation of, by co-enzyme (LEBEDEV), A., 544.
 Zymohexosediphosphoric acid, hydrolysis of, by muscle (BRUGSCH, HORSTERS, and CAHEN), A., 1055.
 Zymophosphates, formation of (v. EULER and BRUNIUS), A., 1061.